

# Computational ethnography and relations in New York City's yellow cab industry

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# Plan

- Abduction as an epistemological framework
- Computational ethnography as a methodological approach
- Yellow cab driver work relationships

# Abductive logic of inquiry

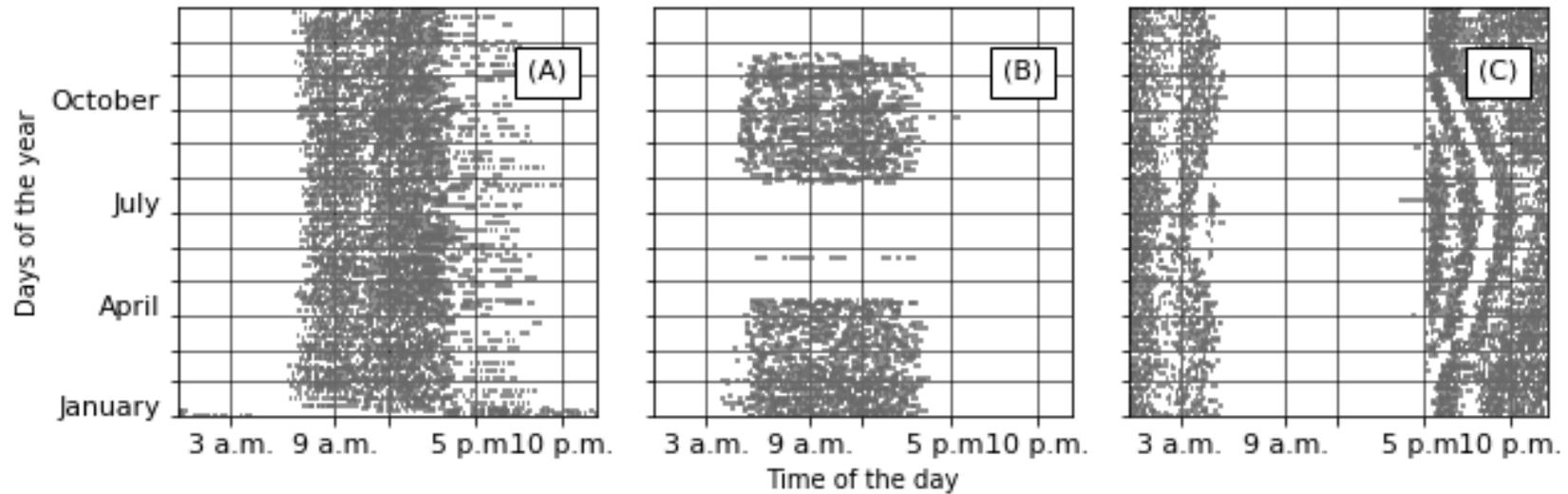
- Between deduction and induction
- Creative leap that may lead to revise an existing theory or the development of a new theory
- Peirce's (1934) logic:
  - The surprising fact, C, is observed;
  - But if A were true, C would be a matter of course,
  - Hence, there is reason to suspect that A is true.
- Existing discussions: McFarland et al. (2016); Goldberg (2015)

with Stefan Timmermans (2021) in *Sociological Science*

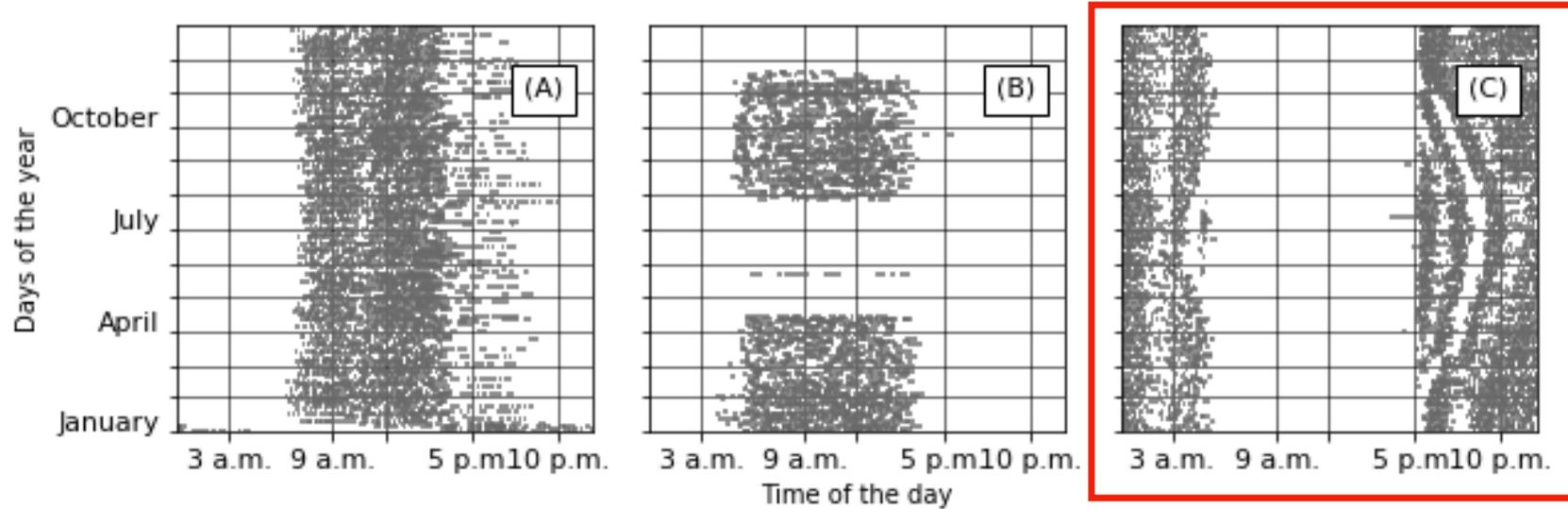
# Yellow cab case—raw data

- 170m time-stamped and geo-coded trips over in 2013
- 14k medallions (taxis)
- 43k licenses (drivers)

# Three yellow cab drivers



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# The yellow cab literature

- Precarious work; attend classes, families back home (Occhiuto 2017)
- Neoclassical model of labor supply (Faber 2005; 2008; 2015) vs. target earnings behavior (Cramerer et al. 1997)

# Tactics

- **Scaling Up Data**

(Social) networks (Milgram 1967; Watts and Strogatz 1998)

Social class survey (Friedman and Laurison 2019; Savage 2019)

- **New Procedures**

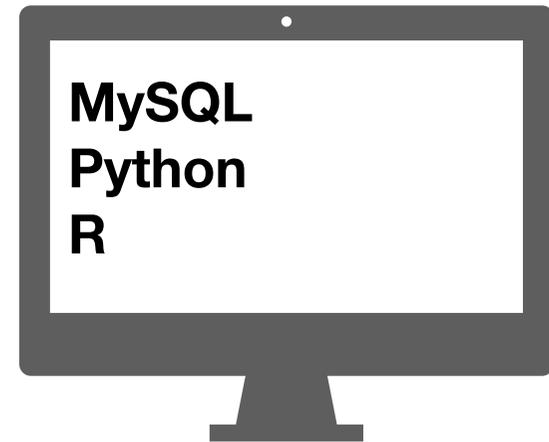
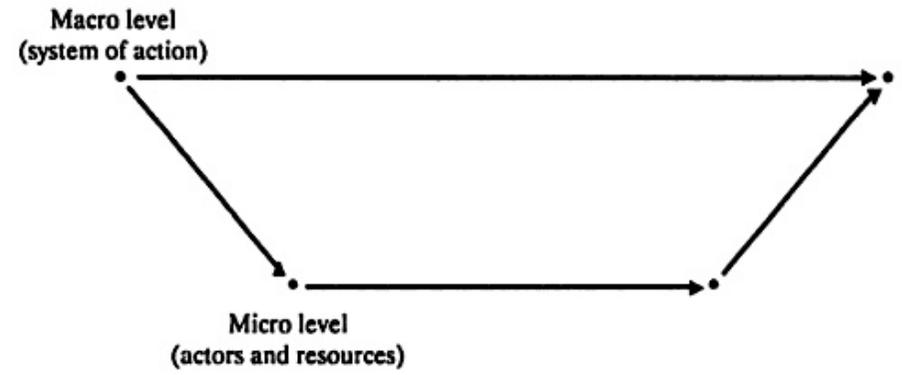
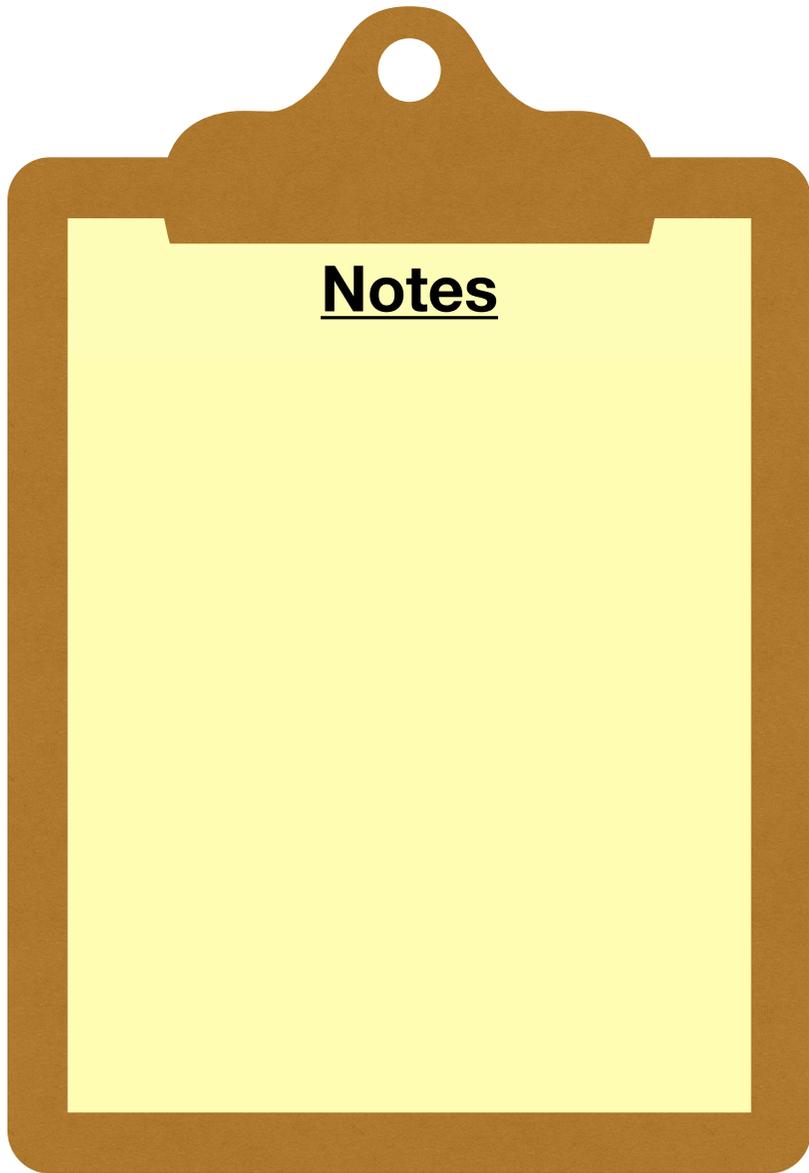
Topic models of rhetorics in radicalism (Karell and Freedman 2019)

Visualization of network evolution (Powell et al. 2005)

# Computational ethnography

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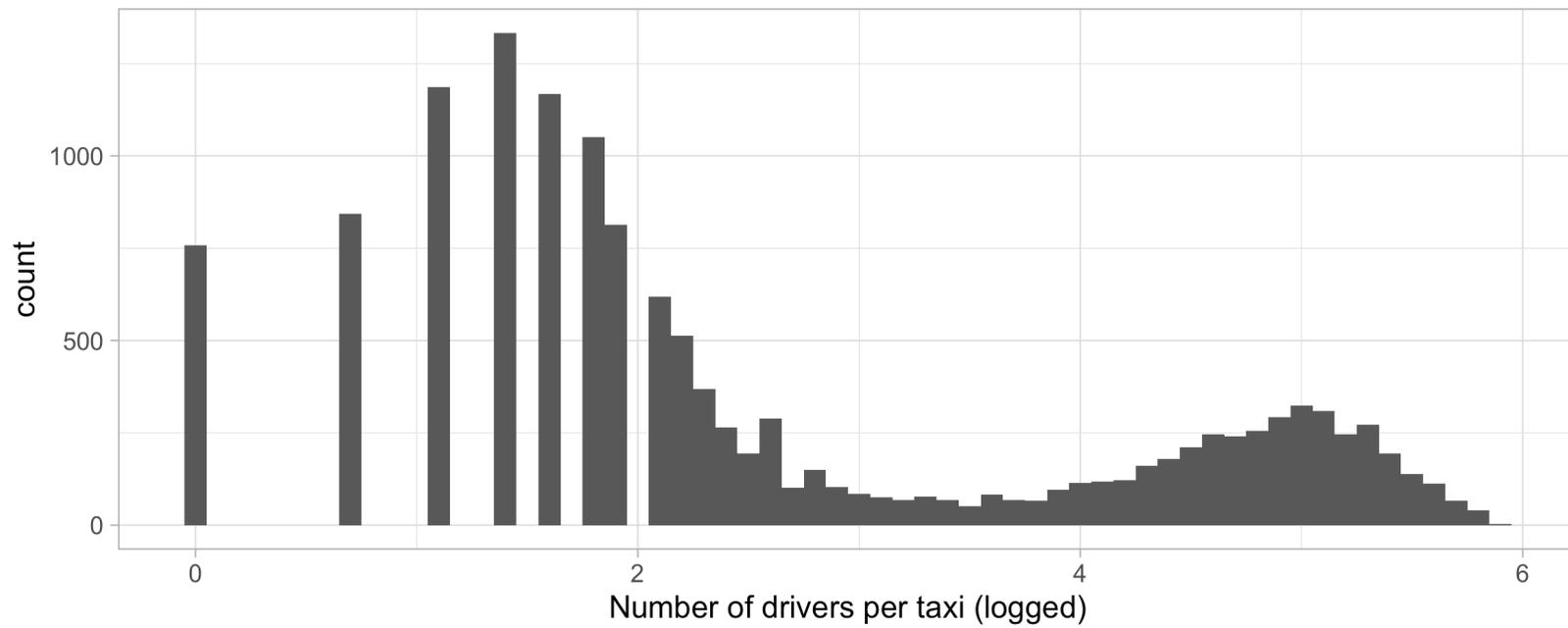
- Search for patterns that may explain a phenomenon (McFarland et al. 2016:18)
- Reconstruct lived social experiences from digital traces
- != Exploratory data analysis



# Taxi handovers



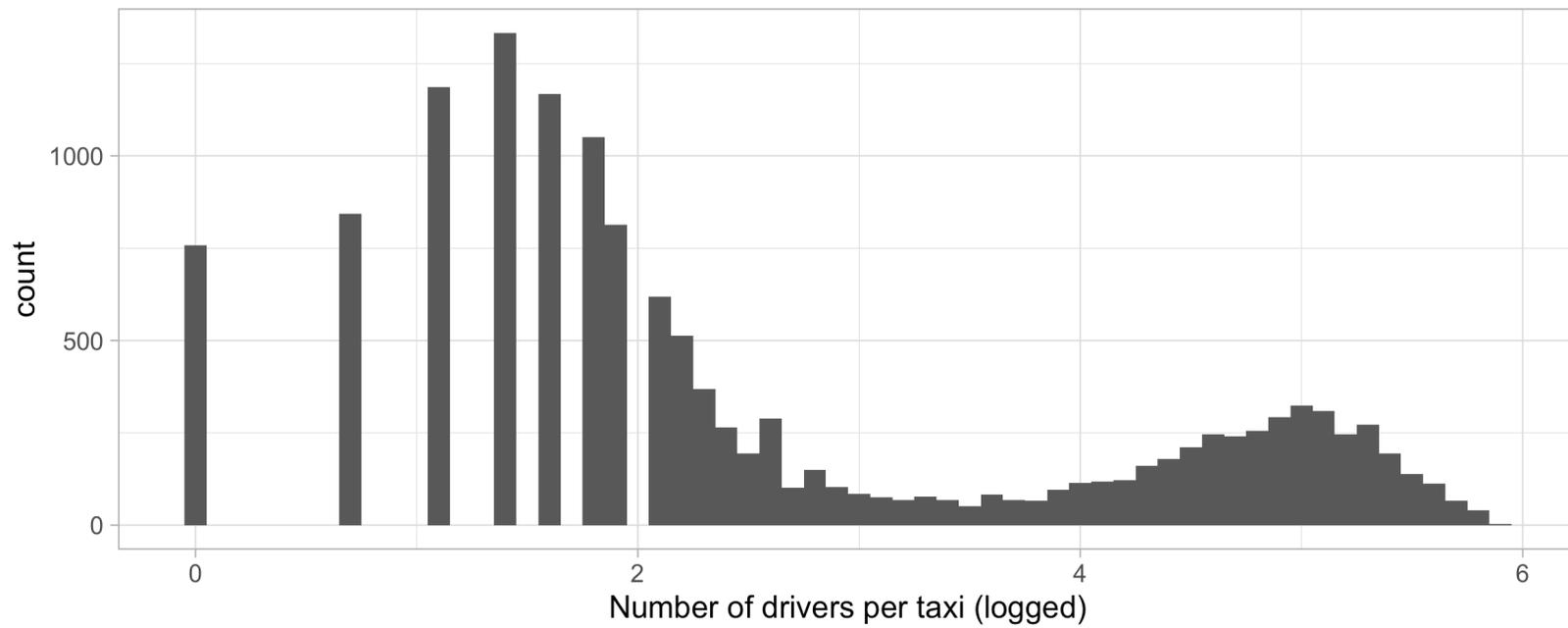
# Macro: taxi interactions

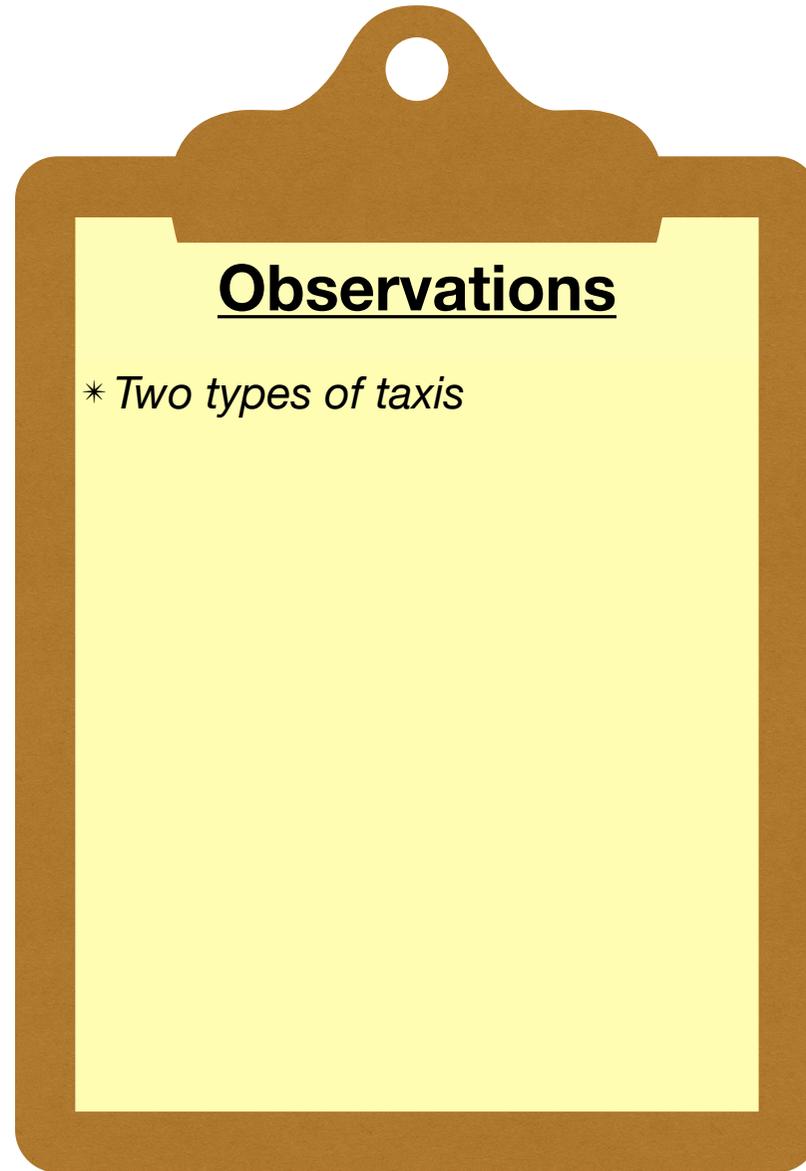


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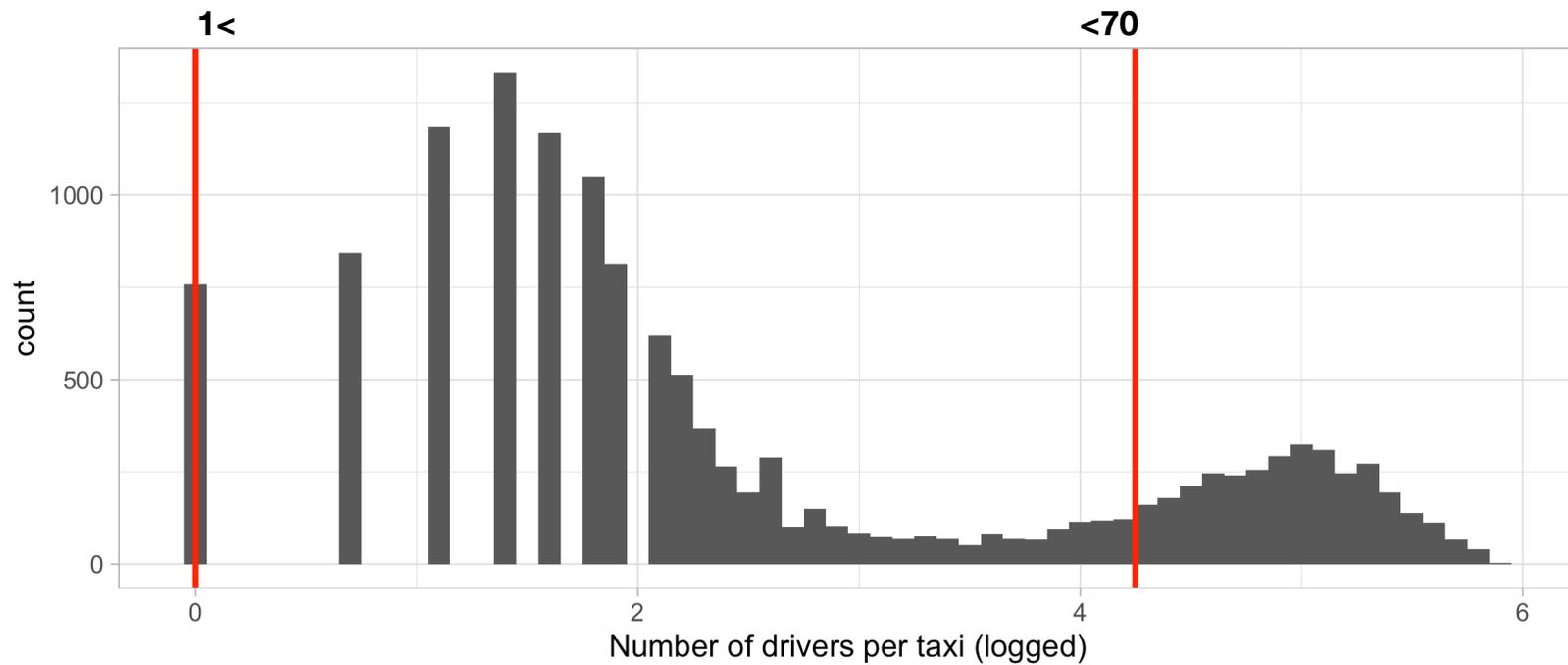




## Observations

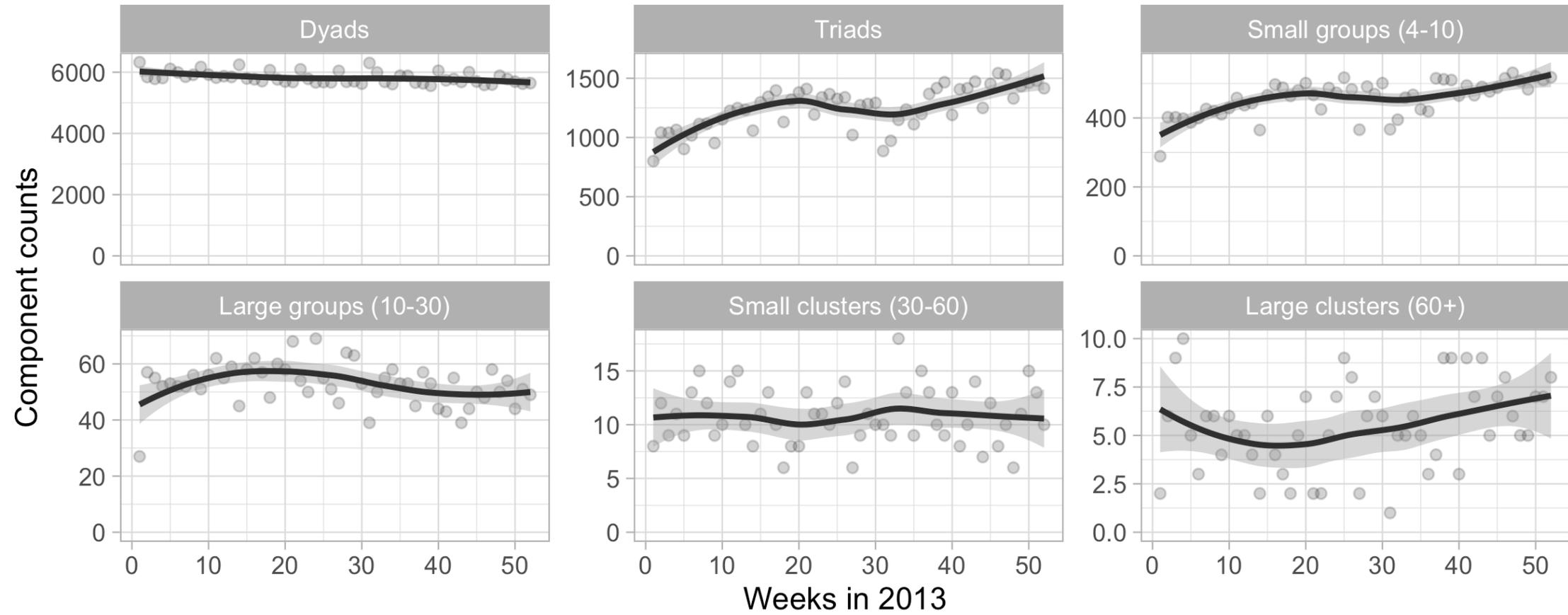
\* *Two types of taxis*

# Interactions and relations

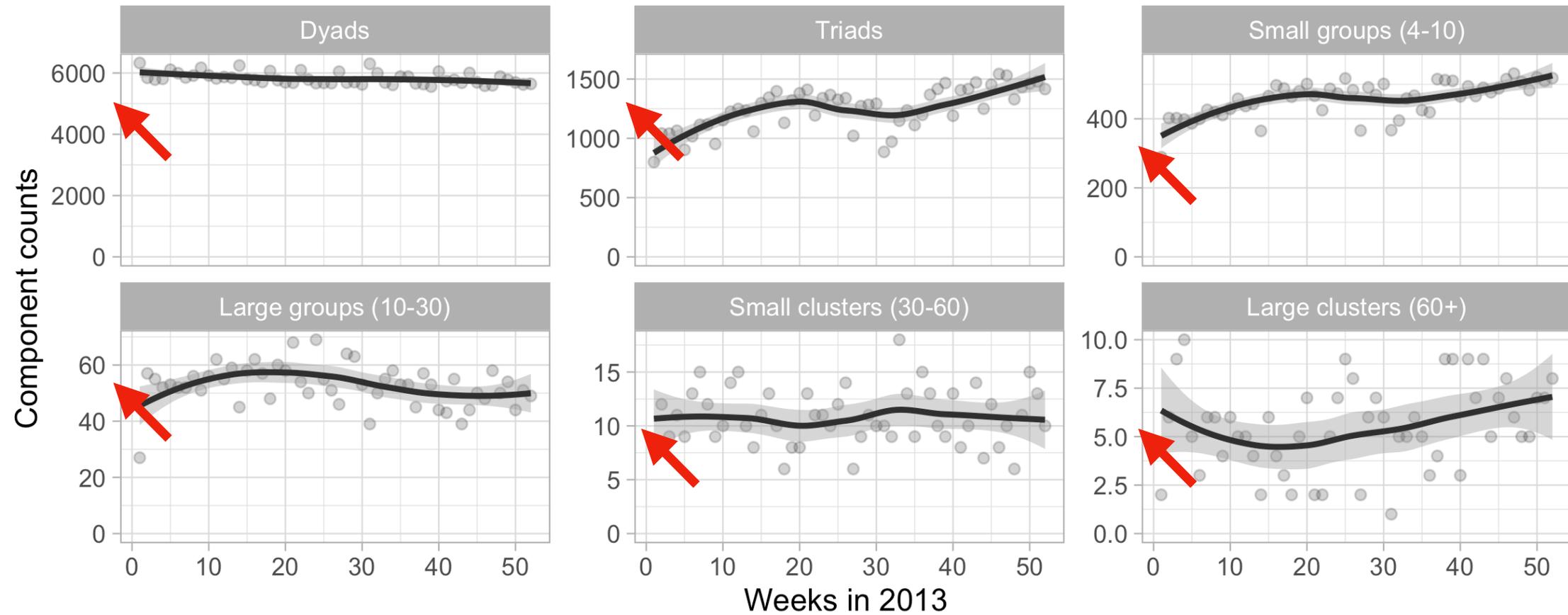


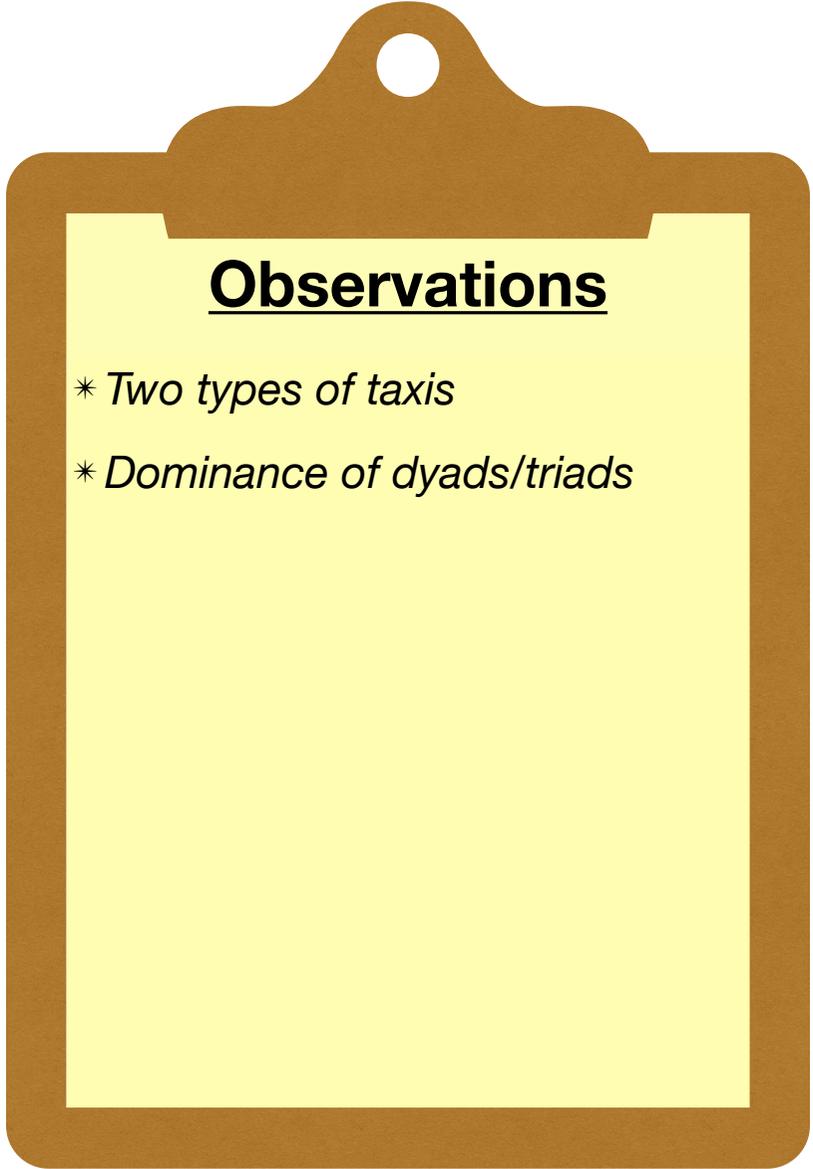
- Retaining 10,076 taxis / 14,144

# Meso: components



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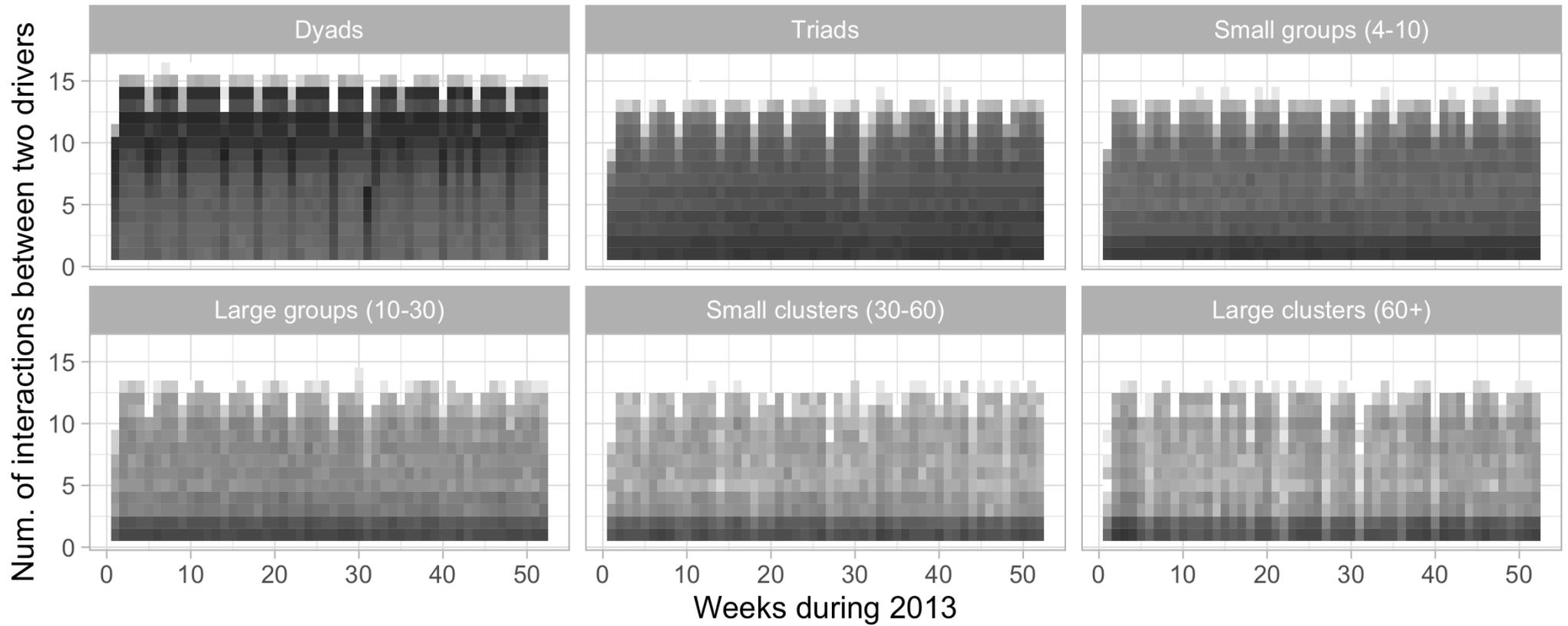




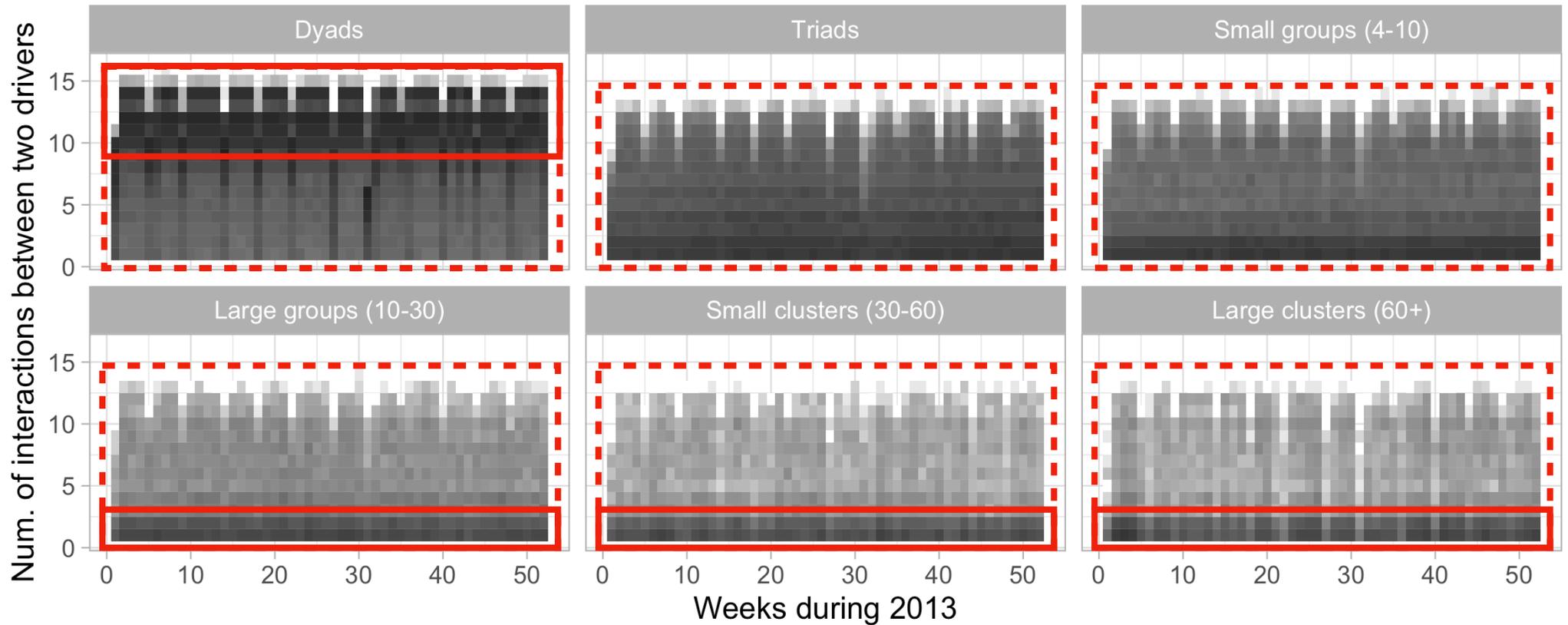
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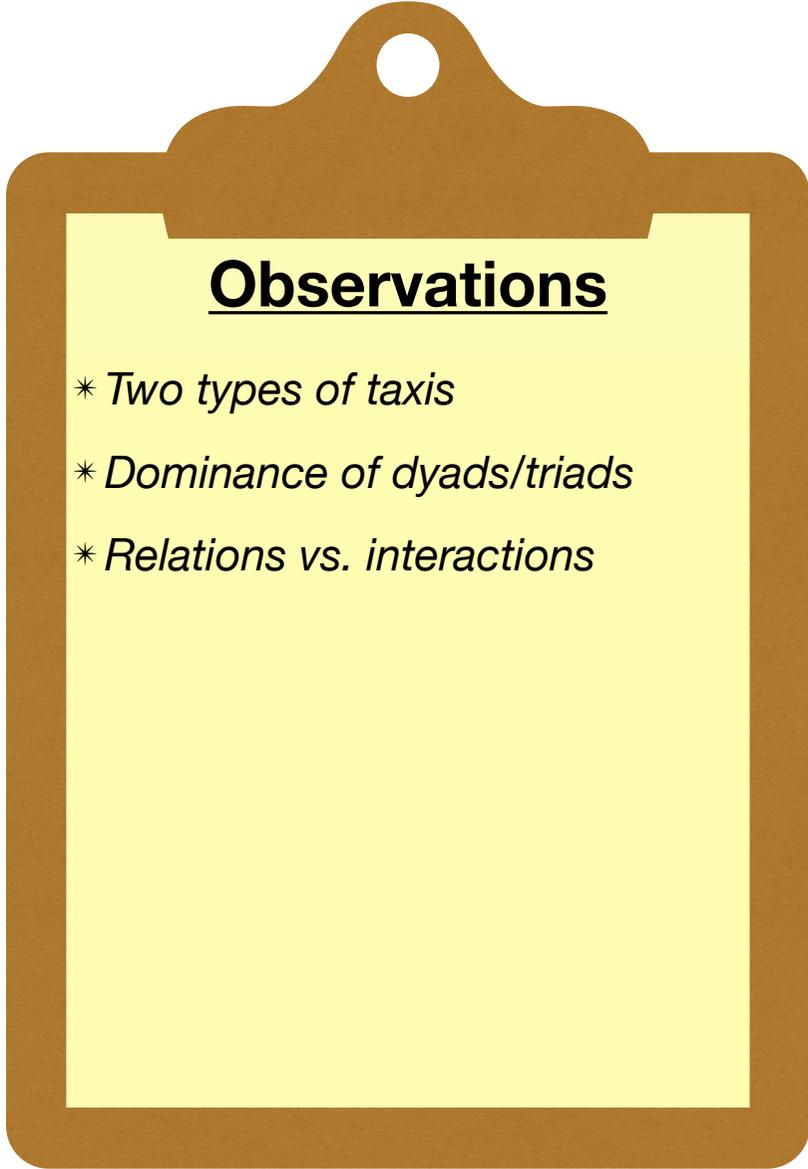
- \* *Two types of taxis*
- \* *Dominance of dyads/triads*

# Micro: relationships



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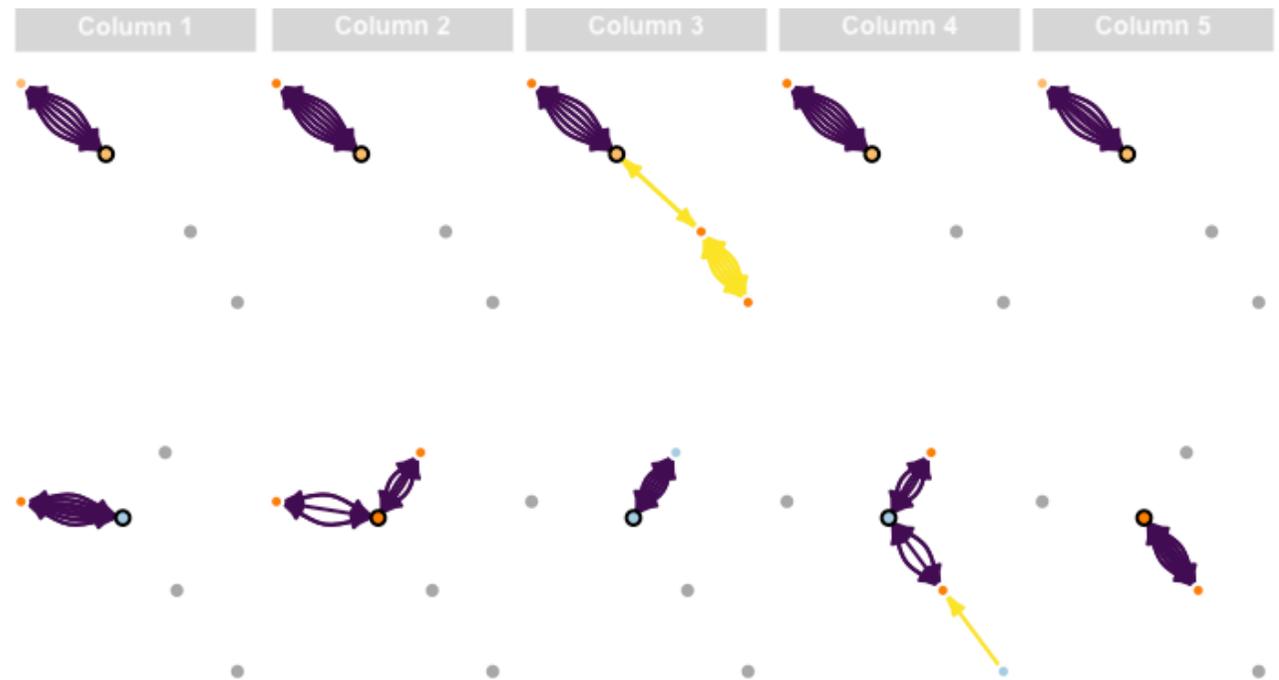


## Observations

- \* *Two types of taxis*
- \* *Dominance of dyads/triads*
- \* *Relations vs. interactions*

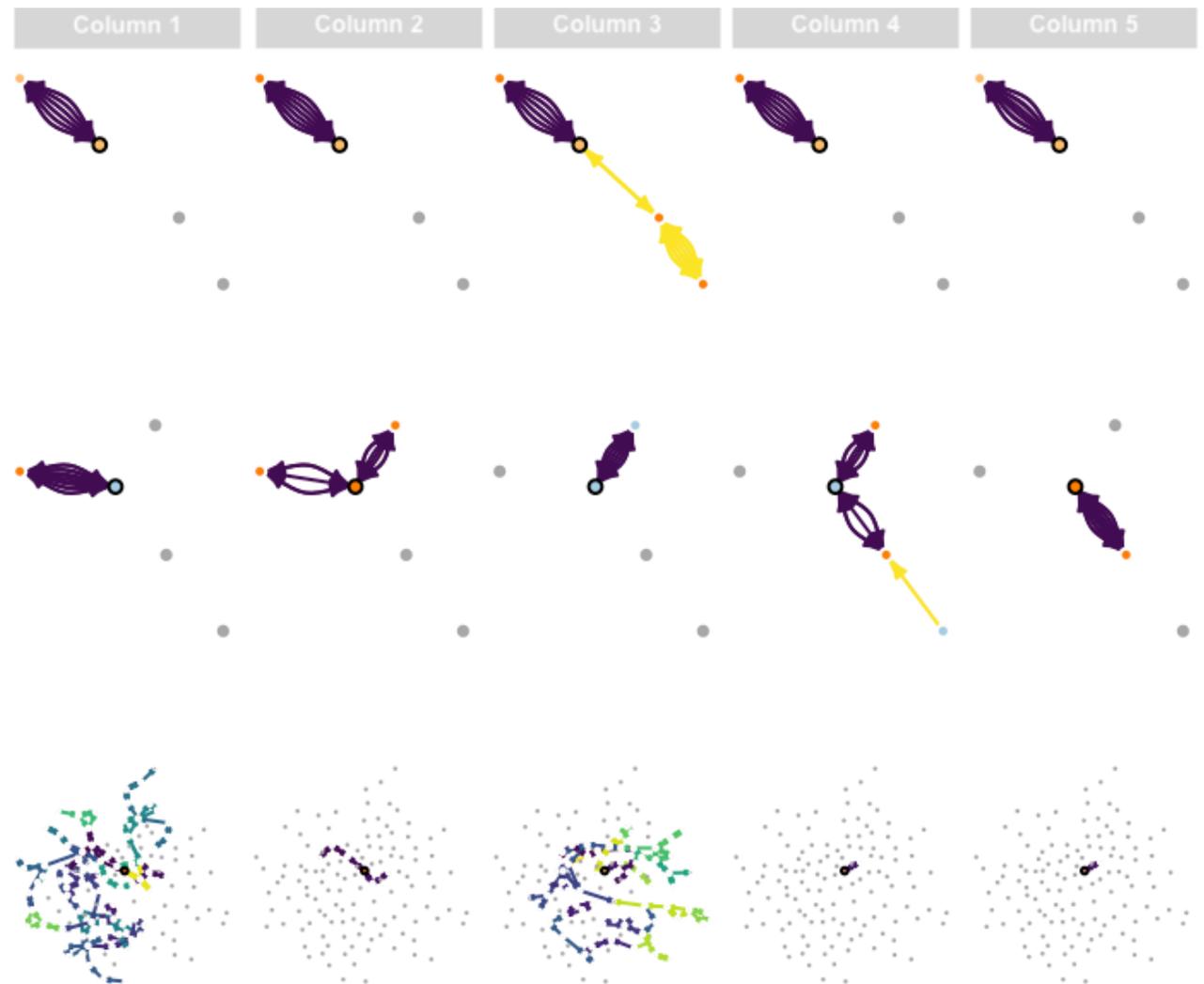
# Micro: actors

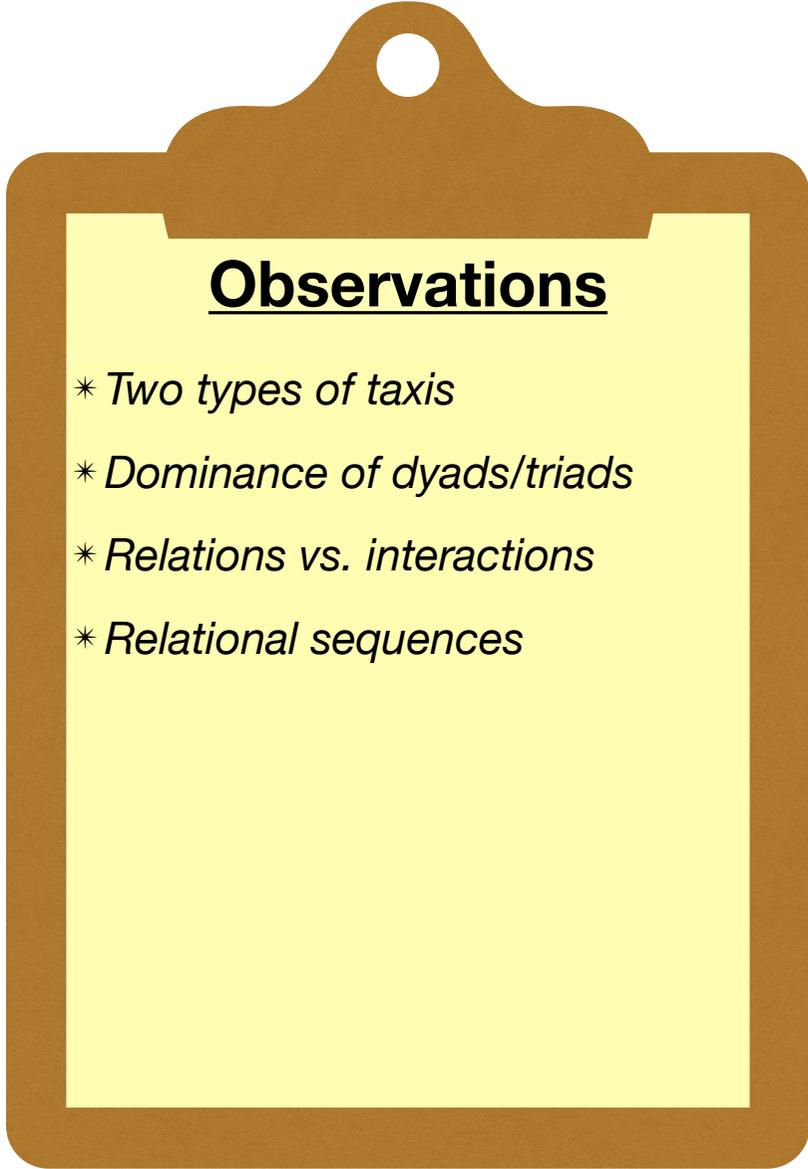
- 3 experiences (rows)
- Col 3 = first week of m
- Edge col = vehicle



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## **Observations**

- \* *Two types of taxis*
- \* *Dominance of dyads/triads*
- \* *Relations vs. interactions*
- \* *Relational sequences*

# Interactions into relations

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Effect		Estimate	Std. error
1 (Intercept)		1,987	0,069
2 Interactions i	Meeting	0,003	0,013
3	Past	0,003	0,001
4 Interactions j	Meeting	0,029	0,015
5	Past	0,002	0,001
6 Broker	Single	-0,003	0,040
7	Multiple	0,158	0,065
8 Meeting context	Small group	0,200	0,038
9	Large group	0,119	0,044
10	Giant component	-0,351	0,053
11 Taxi involvements i		-0,110	0,008
12	j	-0,067	0,038
13 Shift preferences i		-0,020	0,034
14	j	0,119	0,034

# Conclusions

- Religious and relational activities shape labor supply decisions of yellow cab drivers
- The recovery of lived social experiences from digital traces as a distinct research step
- Reporting conventions and debate culture for dataset design steps; e.g., researcher degrees of freedom (Gelman 2016)