



F-Formations

Andrés Lucero

andres.lucero@aalto.fi

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PLAN & PURPOSE

Interaction Design (IxD) 2024 – Department of Design – Aalto University

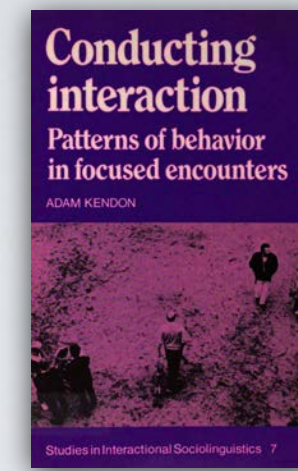
Weeks 2-7: Mondays (9.15-12.00 and 13:00-17:00), Fridays (13:00-17:00) and 16-19.1 (8:30-9:00) Room F102 (M202 on 19.1) @ Väre

	Analyze Week 1	Sprint Week 2	Ideate: Concept Design Week 3
Lecture	Interaction Design Intro Mon 8.1 (AM)	Sprint Mon 15.1 (AM)	Interaction Styles Mon 22.1 (AM)
Reading	Chapter 1: What is IxD? (*)	Knapp et al. (2016) Sprint	Chapter 7: Interfaces (*)
Exercise	IxD Disciplines	F-formations Sprint	Mindful Touch
Lecture	F-formations Mon 8.1 (PM)	Daily Sprint Intro Tue 16.1-Fri 19.1 @ 8:45	Prototyping Mon 22.1 (PM)
Reading	Kendon (1990) Conducting Interaction	-	Chapter 12: Design, Prototyping (*)
Exercise	F-formations	Work on Sprint	Paper Prototype
Presentation	F-formations Observations Fri 12.1 (PM)	Sprint Results Fri 19.1 (PM)	Concept Design Results Fri 26.1 (PM)
	Prototype: Detailed UI Week 4	Evaluate Week 5	Final Design Week 6
Lecture	Design Systems Mon 29.1 (AM)	Heuristic Evaluation Mon 5.2 (AM)	A/B Testing (cont'd) Mon 12.2 (AM)
Reading	Benyon (2019) Designing UX (CH2: PACT)	Goodman et al. (2012) Observing UC (CH11)	Lucero (2015) Affinity Diagramming
Exercise	Detailed UI Design	Evaluation	Final Design
Lecture	Design Systems (cont'd) Mon 29.1 (PM)	A/B Testing Mon 5.2 (PM)	A/B Testing (cont'd) Mon 12.2 (PM)
Reading	Benyon (2019) Designing UX (CH 2: PACT)	Goodman et al. (2012) Observing UC (CH11)	Holtzblatt (2016) Contextual Design(CH6)
Exercise	Detailed UI Design	Evaluation	Final Design
Presentation	Detailed UI Design Fri 2.2 (PM)	Evaluation Results Fri 9.2 (PM)	Final Design Fri 16.2 (PM)

(*) Sharp H, Preece J, Rogers Y. (2019) Interaction Design: Beyond Human-Computer Interaction (5: e ed.)



PURPOSE & OVERVIEW



Purpose

- Understand the notion of **F-formations**
- Introduce the field observation **exercise**

Overview (45 min)

- **F-formations**: theory and a concrete example of in-the-wild exploratory observations
- **Project**: F-formations in-the-wild, form groups, coordinate locations

F-FORMATIONS

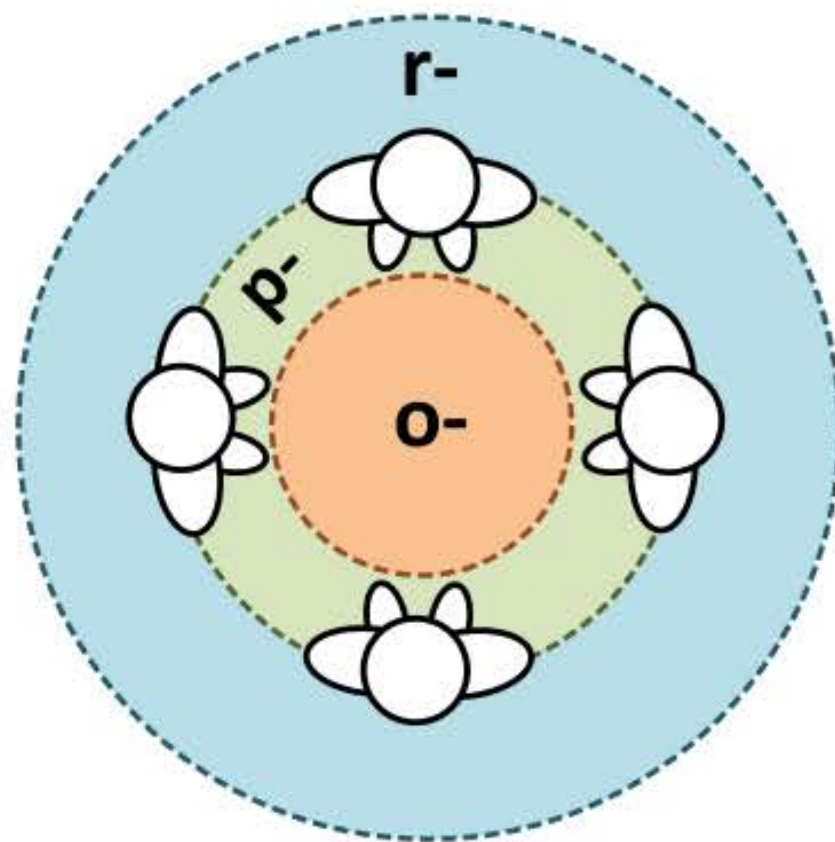
F-FORMATIONS (1/2)

- **F-formation**: also known as **facing formation** (McDermott et al. 1978)
- **Spatial pattern** sustained during **social interactions** (e.g., talking, working, playing chess, eating at a table and offering a cup of water)
- “An F-formation arises whenever two or more people sustain a **spatial** and **orientational relationship** in which the space between them is one to which they have **equal**, **direct**, and **exclusive access**.” (Kendon 1990)

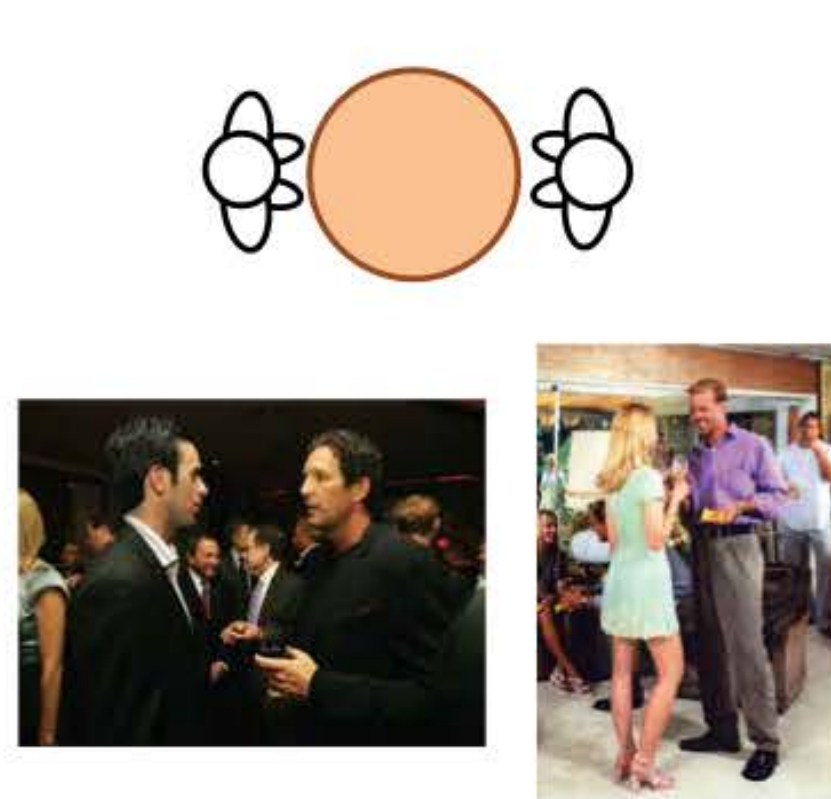


F-FORMATIONS (2/2)

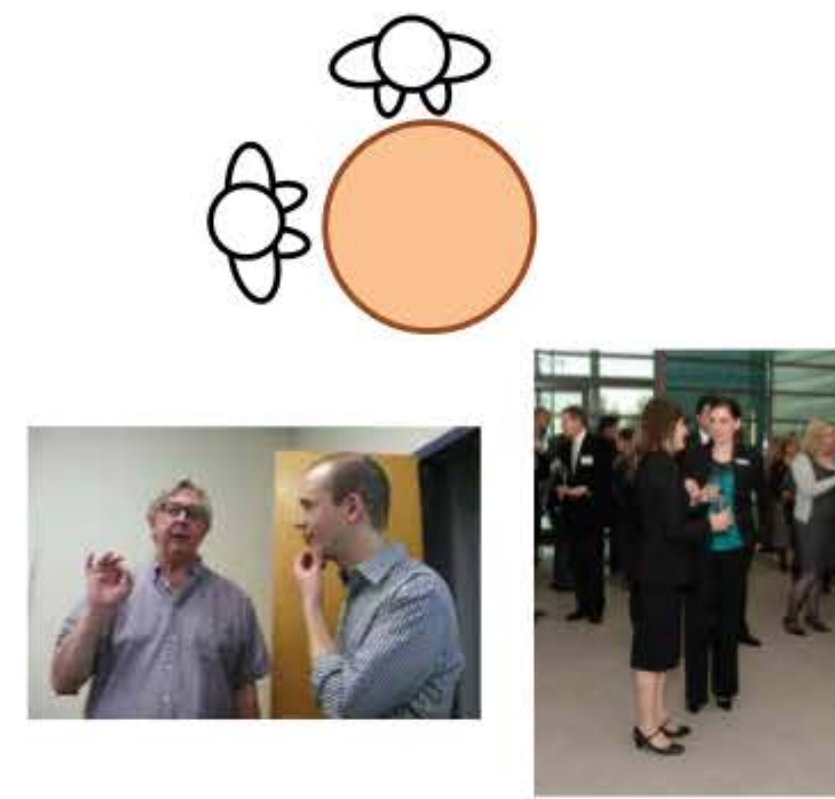
- O-space: convex **empty space** surrounded by **people** involved in a **social interaction**, every participant looks inward into it, and no external people are allowed in this region
- P-space: narrow stripe that **surrounds** the **o-space** and contains the bodies of the talking people
- R-space: area **beyond** the **p-space**



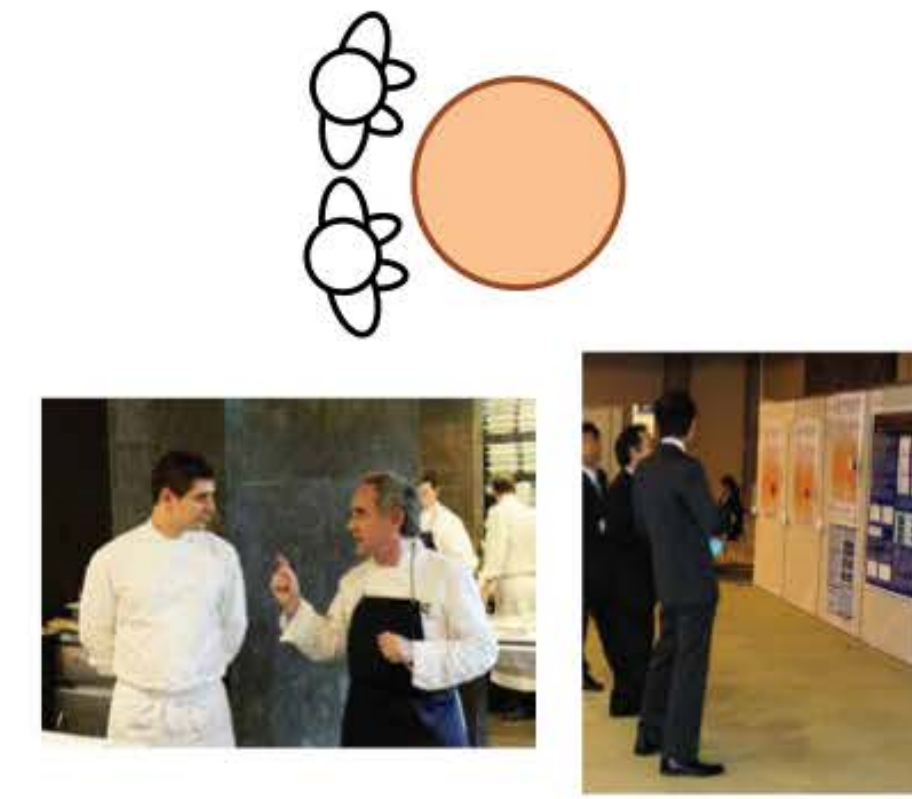
a) *Circular arrangement*



b) *Vis-a-vis arrangement*



c) *L-arrangement*



d) *Side-by-side arrangement*

F-FORMATIONS IN THE WILD



F-formations in the Wild

- MobileHCI workshop in Florence, Italy
- Task: make exploratory f-formation observations in a non-traditional setting
- Location: Duomo area swarmed by tourist
- Participants (n=12): identify things unreported in F-formations studies in controlled settings
- Observations: group size, moving in open space, distance between people, use of devices

A photograph of a busy public square, likely in Rome, showing various social formations. In the foreground, a woman in a blue shirt and white pants with a rainbow bag is talking to a woman with a pink backpack who is pointing towards a building. In the middle ground, a woman in a leopard print top is sitting on a bench, and another woman in a blue top is lying flat on the bench. In the background, a family is gathered near a stone structure with Latin inscriptions. The scene is filled with people walking, sitting, and interacting in different ways.

Different F-formation Types

- Vis-à-vis: people asking for directions
- Other: resting on a bench back-to-back, side-by-side, in an inverted I-shape and lying flat
- Circular: family in the background by the stairs

A group of diverse tourists, including men and women of various ages, are standing in a line. They are dressed in casual summer attire like t-shirts, shorts, and caps. The background shows a grand, classical-style building with ornate architectural details. A black signpost with a map and icons is visible on the right side of the frame.

Tourist Guides

- General: mix of tourists and locals doing different activities (e.g., walking, shopping, families carrying suitcases or with strollers, people riding or walking next to their bikes)
- Most frequent F-formation: people gathered in a semi-circular or less orderly layered fashion around a tourist guide



Taking Pictures

- Selfies: two people side by side attempt to take a selfie, while a guided tour walks around them (left)
- Crouching: two people crouching to take a picture of the same person and the Duomo behind her created a triangular F-formation at different heights (right)



Directions on a Map

- Tourist guides: show directions by standing vis-à-vis the tourist holding the map so they see the map in the right orientation
- Second tourist: takes less active role next to them creating a triangular formation







Unusual F-formations

- Back-to-back: couple adopts formation to avoid potential pickpocketing (left)
- Ground: a person taking a photo from the ground to capture entire Duomo (right)





Technology Uses

- Internet: couple (left) and girl (right) using smartphones while sitting side-by-side
- Skype: a man in the background makes a Skype call using a headset (right)

EXERCISE: FIELD OBSERVATION

EXERCISE: F-FORMATIONS IN THE WILD

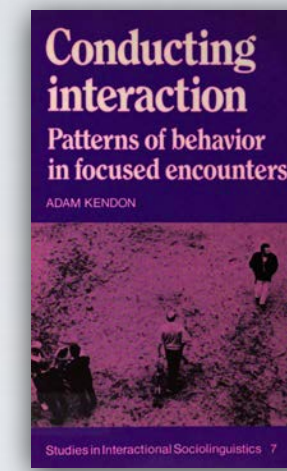
Observing F-formations

- We know how **people** arrange themselves **spatially** and **behave** in certain settings (e.g., dinner table, classroom, hospital's waiting room). There are **less-structured, dynamic, larger-scale** (semi-) public spaces that present opportunities for technology to enrich how people experience them
- **Task:** actively **observe** different situations where groups of **people** socially **interact** with each other in **public spaces** in Helsinki/Espoo (e.g., airport, museum, library)
- **Documentation:** on-site **sketching**, still **photography**, short 2-min unedited **video clips**
- **Deliverables:** 3-4 video clips, 4-6 photo/sketched/comics storyboards of **situations** or **problems** you observed that create **opportunities** for technology to **enhance UX**
- **Note:** this is a field observation exercise, **not (yet) a design exercise**. You will think of solutions to the problems you identify this week during week 2 of the course

Present your results (15 + 5 minutes per group)

FURTHER READING

FURTHER READING



Books

- Kendon A (1990) *Conducting interaction: Patterns of behavior in focused encounters*. Vol. 7. CUP Archive.

Articles

- Marquardt N, Hinckley K, Greenberg S. Cross-device interaction via micro-mobility and f-formations. *UIST '12*, 13-22. <http://dx.doi.org/10.1145/2380116.2380121>
- Marshall P, Rogers Y, Pantidi N. Using F-formations to analyse spatial patterns of interaction in physical environments. *CSCW '11*, 445-454. <http://dx.doi.org/10.1145/1958824.1958893>
- McDermott R, Roth D (1978) The social organization of behavior: Interactional approaches. *Annual Review of Anthropology* 7, no. 1, 321-345. <https://doi.org/10.1146/annurev.an.07.100178.001541>
- Paay J, Kjeldskov J, Skov MB. Connecting in the Kitchen: An Empirical Study of Physical Interactions while Cooking Together at Home. *CSCW '15*, 276-287. <http://dx.doi.org/10.1145/2675133.2675194>
- Tong L, Serna A, Pageaud S, George S, Tabard A. It's not how you stand, it's how you move: F-formations and collaboration dynamics in a mobile learning game. *MobileHCI '16*, 318-329. <http://dx.doi.org/10.1145/2935334.2935343>

QUESTIONS?

Andrés Lucero

andres.lucero@aalto.fi

 [@andrikos](https://twitter.com/andrikos)

