

Spatial configuration in adult day-care centers for people with dementia

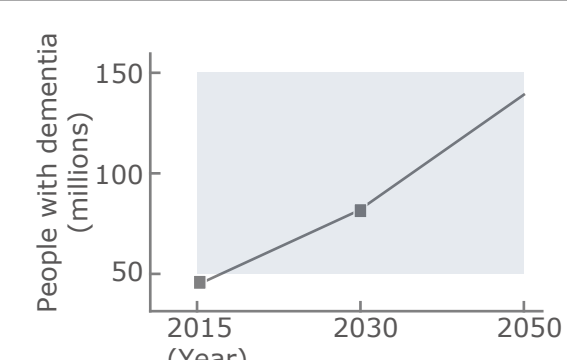
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1 Background

Dementia - a public health priority

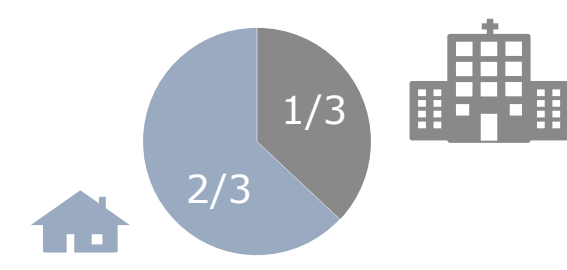
1, Who is affected?

- Over 47 million people worldwide
- Close to 8 million new cases every year
- 7-11 in each 100 people aged 65 and older
- Cases set to almost triple by 2050



2, Challenges in dementia care?

- Two thirds of people with dementia live in community
- Insufficient support for caregivers

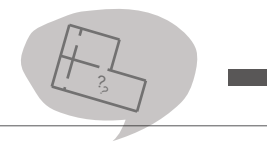


3, Adult day-care center

- An alternative choice: adult day-care centers (ADCs) are leaders in providing care to individuals with Alzheimer's disease and other dementias



- Overall levels of satisfaction were high
- A relief to caregivers from stress of full time care
- An alternative choice of long-term care facilities

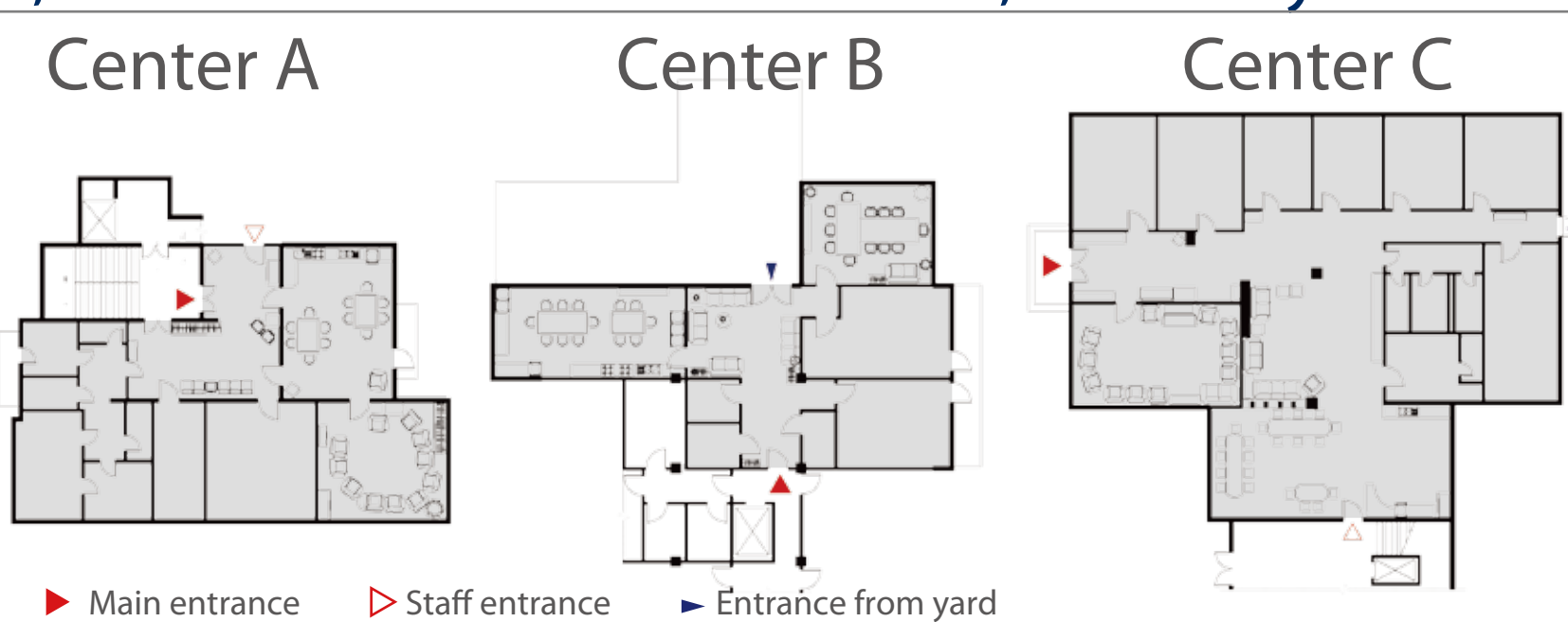


- Lack of specialized design
- Environments could not always foster their goals
- Emphasis is on programs instead of environmental settings

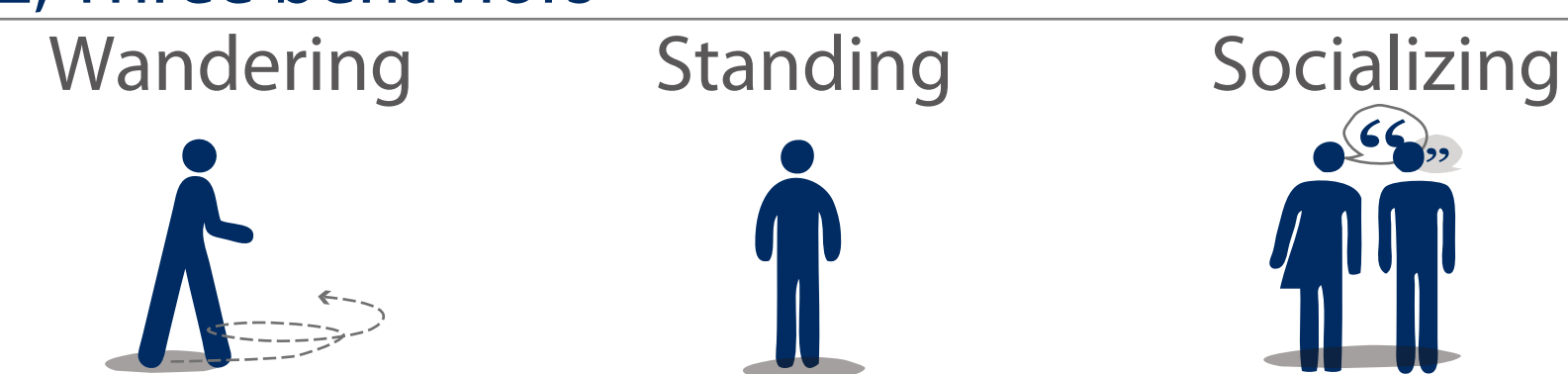
2 Objective

Relation between spatial configuration and the participants' behavior in ADCs.

1, Three case studies in Dresden, Germany



2, Three behaviors



3 Methods

1, Space Syntax

- A robust methodology providing objective metrics.
- Has been applied in an increasing number of studies on environmental-behaviour research linking human behaviours to spatial configuration.
- Space accessibility is the value applied in this study to identify the spatial configuration. It was identical to Visual Integration Value (VGA) from Depthmap software produced by Space Syntax Limited.

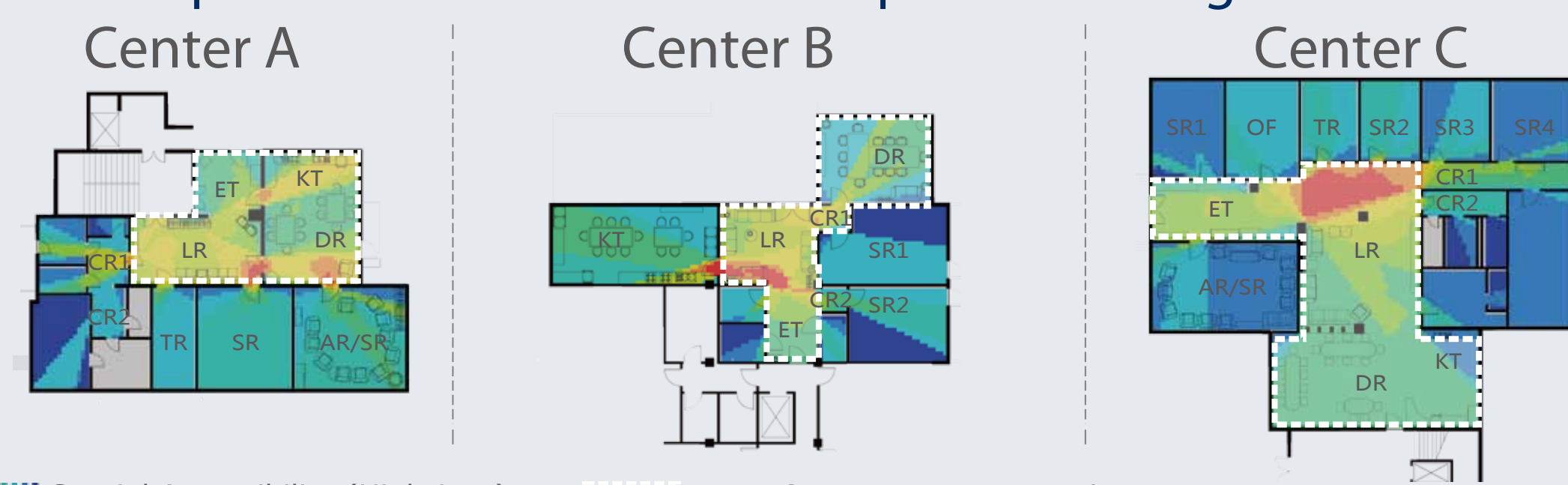
2, Behavior Mapping

- A type of systematic observation that tracks behaviour over space and time.
- In this study, place-centred maps were used to record the targeting behaviours of all service participants within places and times, as well as other status consisting of partner and movement flows.
- Conducted on Monday, Wednesday and Friday from 9:00 a.m. to 4:00 p.m. in time slot of 5 mins, lasted for four weeks at each center (84 hours in total).

4 Results

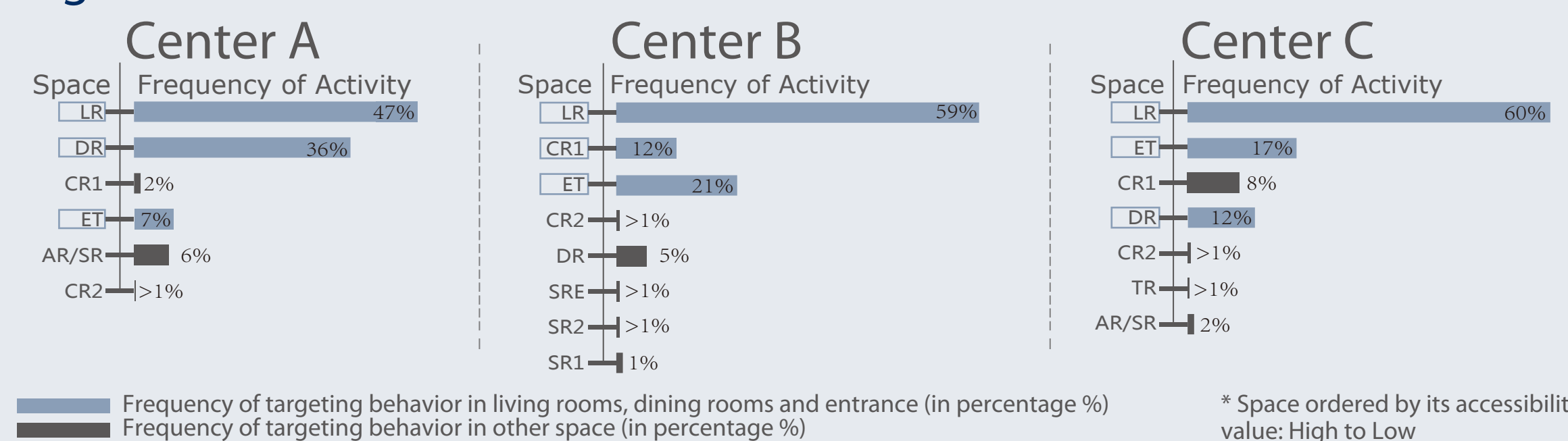
Data analyses show i, a positive correlation between spatial accessibility and frequency of targeting behaviors; ii, they occur chiefly within common spaces of ADCs; iii, buildings with higher spatial accessibility contains more socializing behavior and less movement.

1, Common spaces within ADCs are the spaces with higher accessibility.



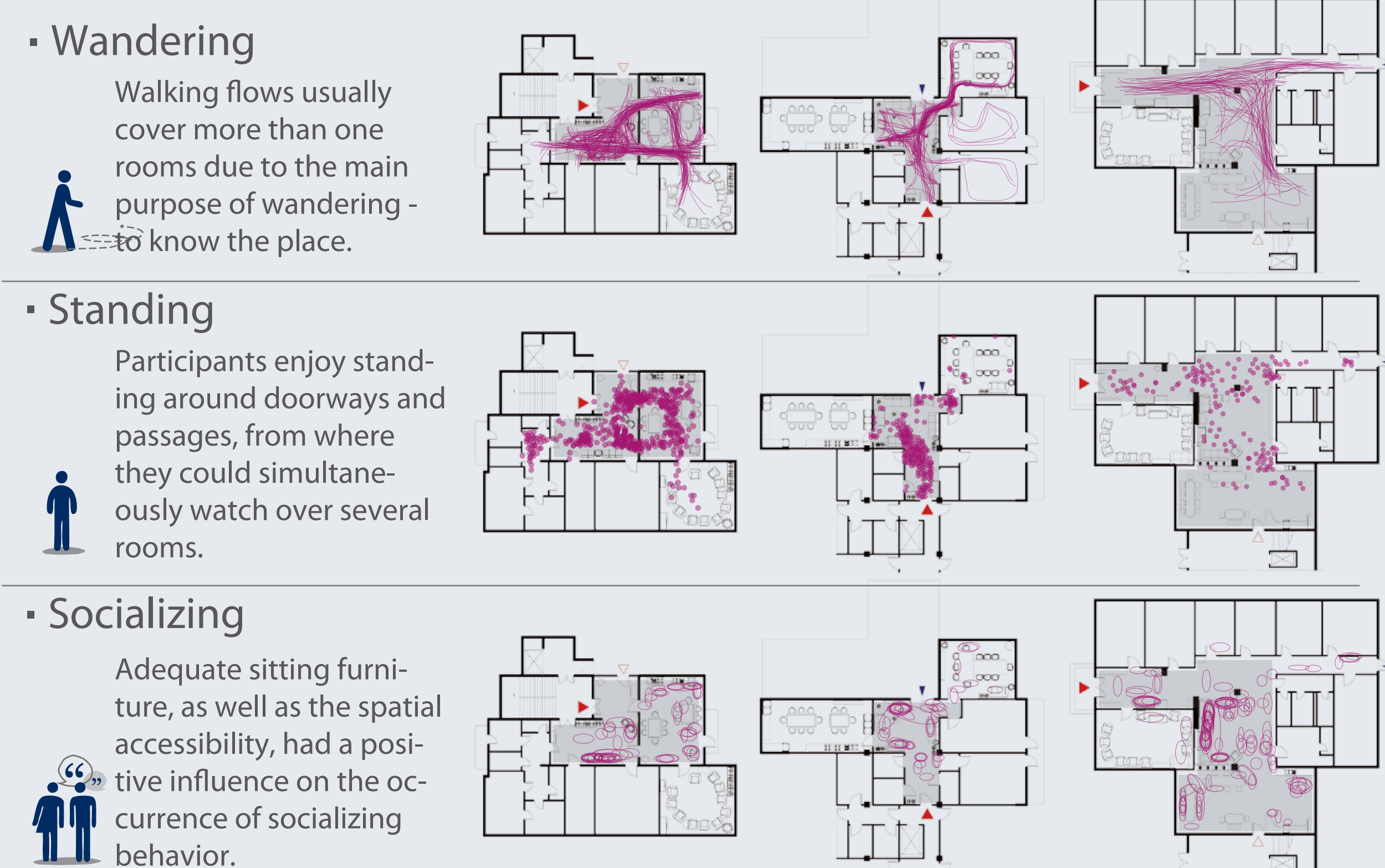
Legend: Spatial Accessibility (High-Low) Area of common spaces within ADCs
Acronym: LR = Living Room DR = Dining Room SR = Sleeping Room AR = Activity Room KT = Kitchen ET = Entrance CR = Corridor OF = Office

2, Around 90% of all targeting behaviors happened in living room, dining room and near the entrance.



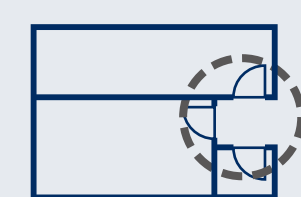
* Space ordered by its accessibility value: High to Low

3, Buildings with higher spatial accessibility contains more socializing behavior and less movement.



5 Recommendations

As an ongoing project, a few preliminary recommendations were derived from data analysis. We are looking forward to sharing the current results, and expecting discussions with you about the process of recommendation-deriving.



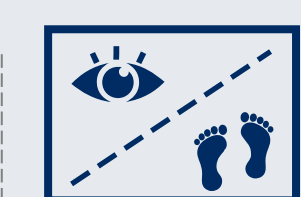
Space connection and Space node need to be broader.

Congestion situations happens easily in these spaces, then block the participants which can cause injuries and also lead to aggressive behaviours.



Always consider usage of walkers and wheelchairs during arrangement.

Many guests in ADCs are walker or wheelchair depended. While using furniture, they always have problems of placing them.



Supply space with better accessibility and visibility.

A space with good accessibility and visibility helps to decline the occurrence of wandering problem of people with dementia.

Acknowledgments:

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