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# Exposure of young children to settled dust: an analysis of parental knowledge and risk perception

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# Exposure of young children to settled dust

an analysis of parental knowledge and risk perception



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# Context and goals

Child: Floor games,  
hand/mouth object contact,  
hygiene



**Chronic ingestion:**  
20-100 mg/day (USEPA, 2017)  
→ **Exposition ??**

Ingestion →



Inhalation ←

← Skin contact

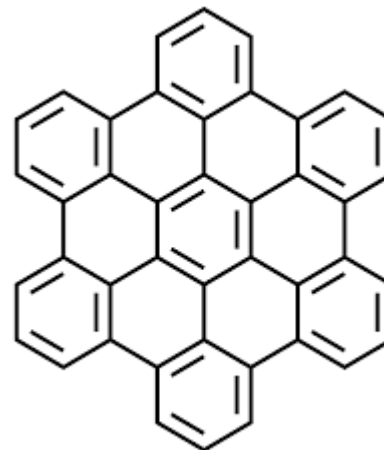
**Children = fragile population**  
**In development, Size/weight**  
**ratio, Latency of effects**  
→ **Danger??**

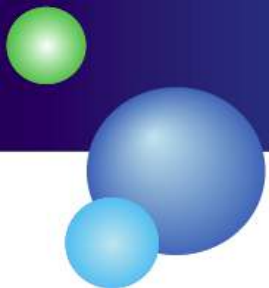
**Study the risk that dust settled on the ground  
represents for young children**

- **Chemical** analysis of settled dust in schools
  - playgrounds
  - Classroom
- **Genotoxic** analysis of the settled dust
  - Mutagenic potential → by ‘ingestion’ and ‘skin contact’
- **Exposure** to settled dust in the household
  - Analysis of **cleaning behaviour** in the household
  - **Risk perception**

## First chemical results

- Preliminary analysis show the presence of PAH in settled dust in schools – both in urban and rural areas
  - Polycyclic Aromatic Hydrocarbon



- 
- Literature shows that
    - **Exterior** environment is regarded as ‘dirtier’ than **interior** environment
    - **Microorganisms** present in dust raise more concerns than other **chemical particles**

[Mackendrick, N. (2014); Crighton et al. (2013)]

- How do parents of young children think about dust?
  - How they **understand** settled dust?
  - How do they **perceive risks** related to settled dust?
  - What are the variables explaining cleaning behaviours?

- 1 pre-study (50 parents)
- Study 1 (212 parents)

Aix-Marseille Region

## Variables

- ‘risk perception’ of settled dust
  - home, exterior, at school
  - Own kid, other kids
- Knowledge about settled dust
- Preventive **behaviour** → cleaning!
- **Parenting** style
- Trust in institutions

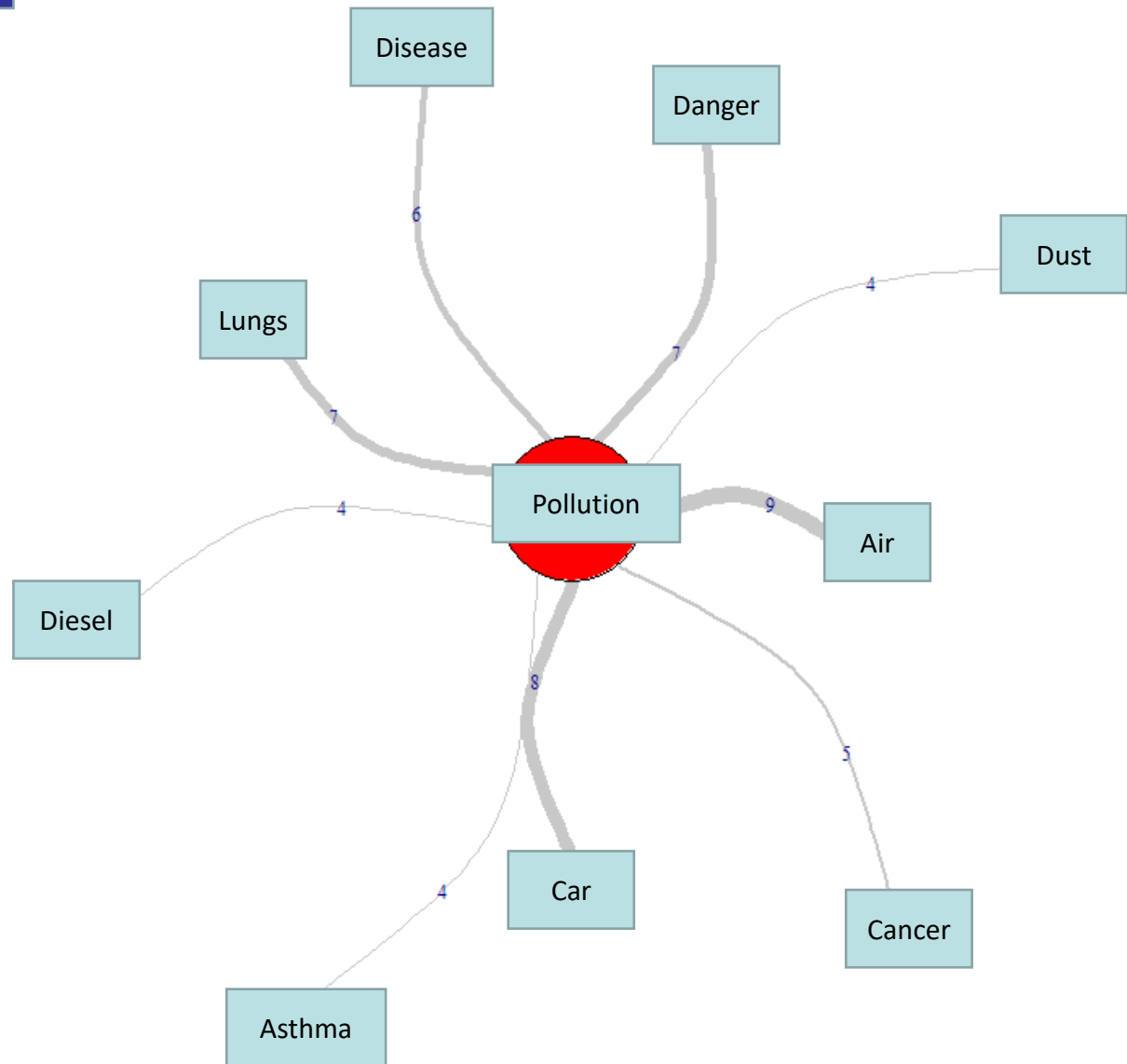


**Qualitative pre-study** to better target the “types” of household chores and those that are relevant for this study

VARIABLES

# Results

What are the first ideas that come to mind when you think about 'settled dust' (fine particles)

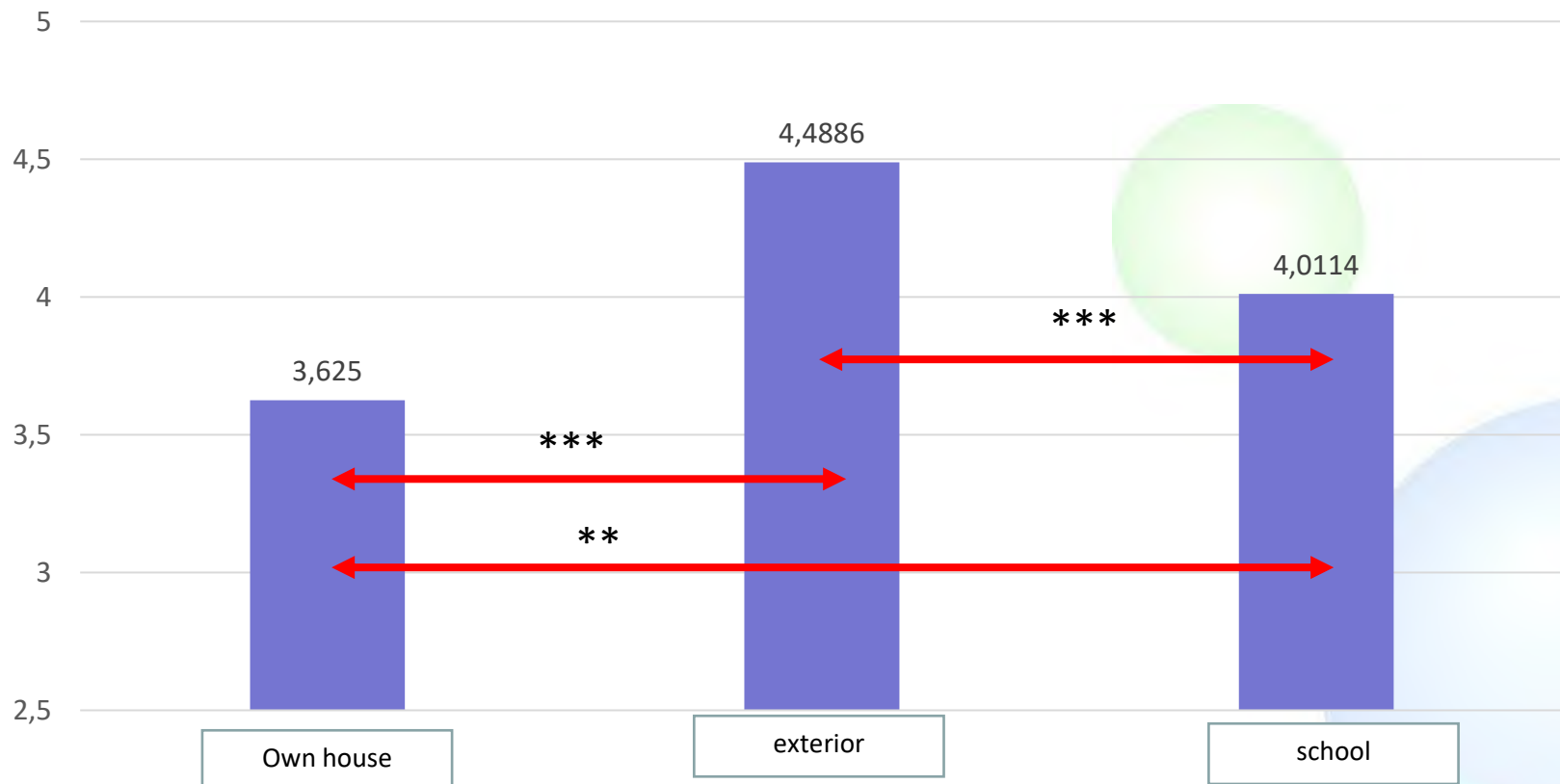




# Results

Pre-study (end of first COVID lockdown, 2020)

## Perception of the risk of exposure to fine particles



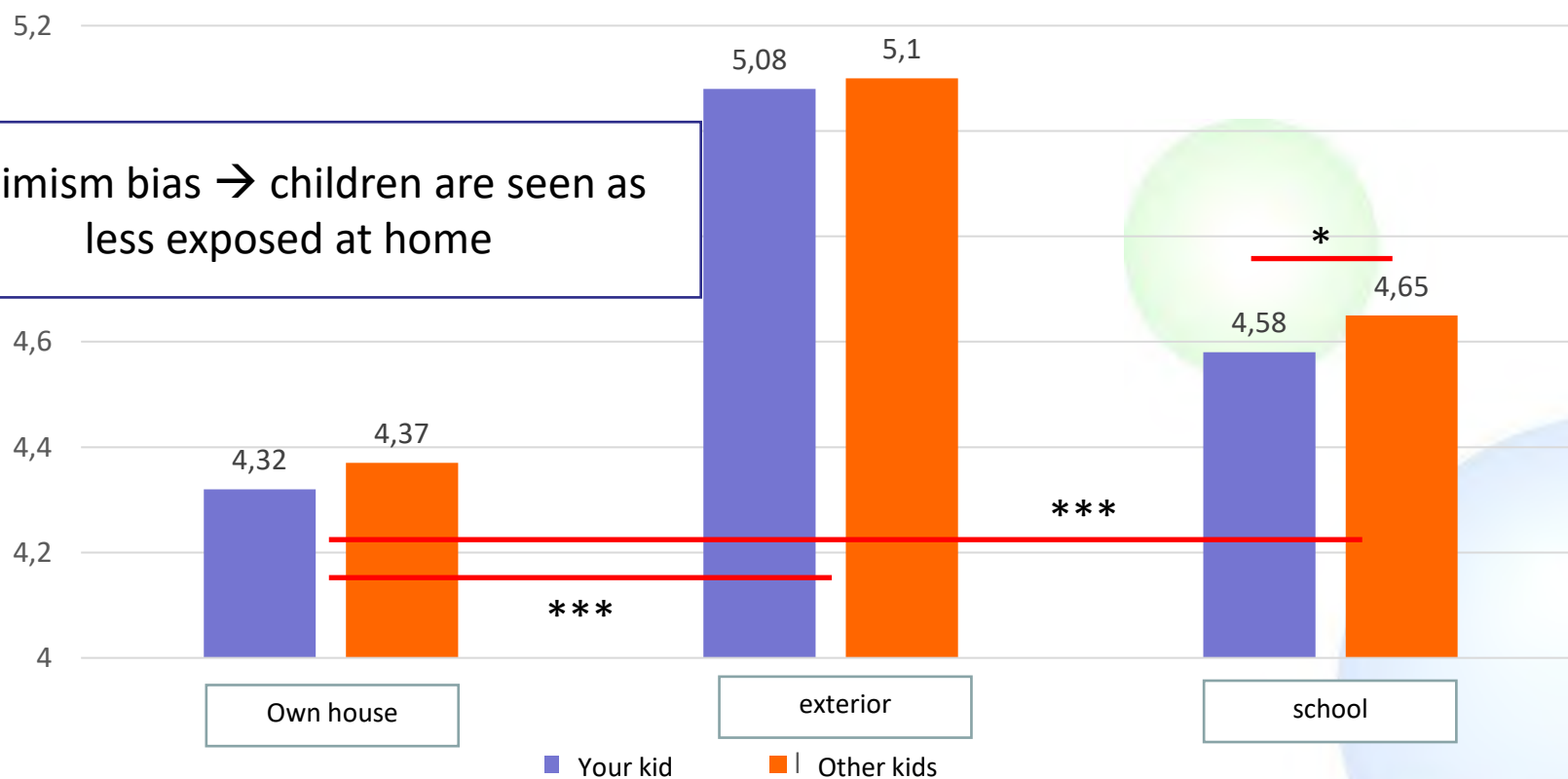
# Results

## Main effects

1. Optimism bias ( $p < .05$ )
2. proximity ( $p < .001$ )

Perception of the risk of exposure to fine particles

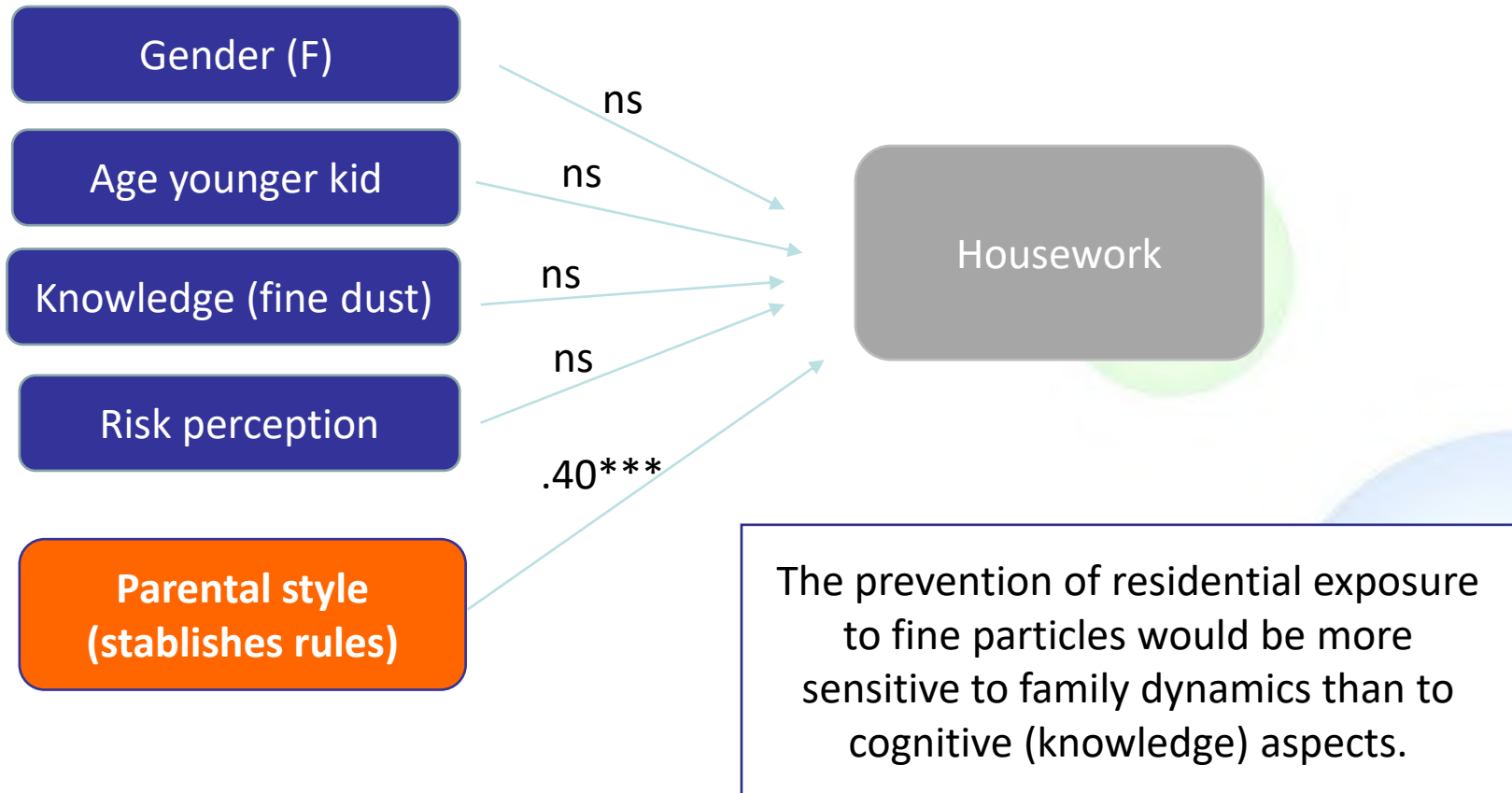
Optimism bias → children are seen as less exposed at home



# Results

Regression analysis  
housework (cleaning surfaces)

Campagne 2 – février-mars 2021



- *Optimism bias*
  - Fine particles are seen as more dangerous **outside the household** – in contradiction with toxicological analysis
  - Impacts are regarded as relatively more important on other peoples' kids
- Weight of contextual over cognitive variables in explaining household practices (e.g. Aune, 2007; Bertoldo et al., 2015)
  - **Family dynamics** contextual factors largely shape behaviours with potential impacts on young children health