

Using self-other substitution to induce behaviour change: The case of earthquakes in Southern France

Adam Chesterman

Directed by P. Rateau & K. Weiss

Université de Nîmes/Aix-Marseille Univ.

Laboratory of Social Psychology (E.A.849)

European PhD on SR & C



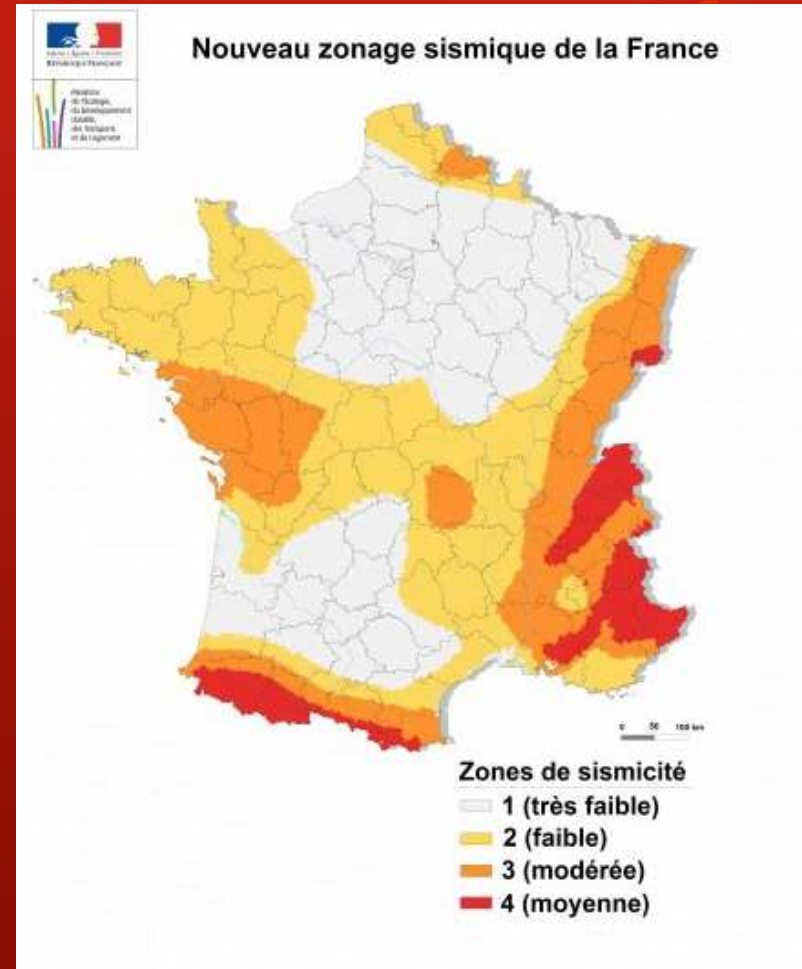
The background is a solid red color with faint, stylized leaf patterns in a slightly darker shade of red, primarily visible along the left and right edges.

General presentation of the thesis

Earthquake "prevention" in Southern France

Context and stakes

- Provence-Alpes-Côte d'Azur = France's region most prone to seismic activity
- 2300 to 2500 earthquakes are recorded each year in the region

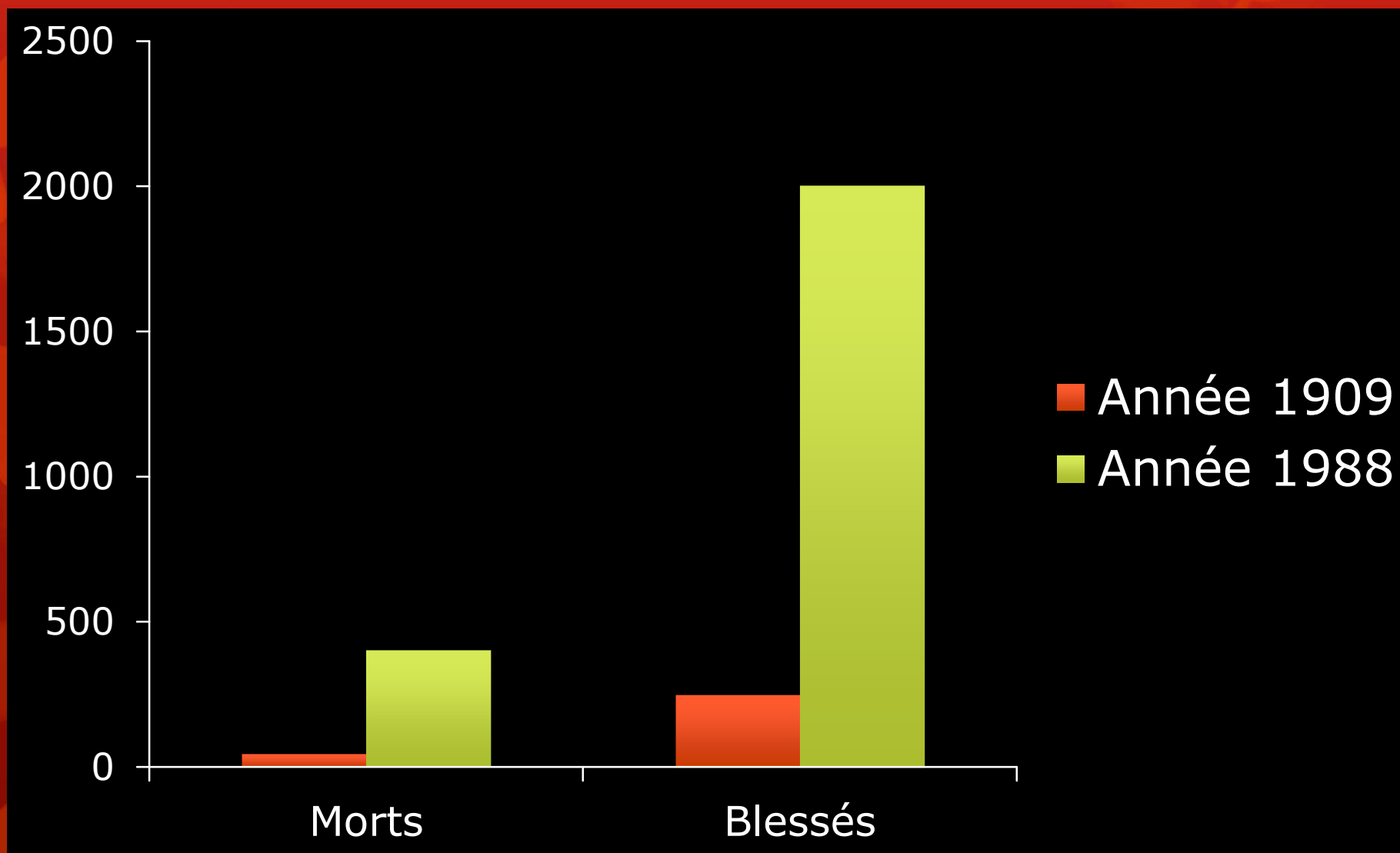


Context and stakes

- Lambesc earthquake in 1909:
 - 46 dead
 - 250 injured
 - 300 million € of damage



Context and stakes



Inappropriate messages lead to inappropriate behaviour

- Predicting earthquakes is impossible
- Prevention is a capital factor for protecting populations
- Previous research mainly focuses on the construction of persuasive messages (Mulilis, 1998; Lindell & Perry, 1996, 2004, 2006)
- But they don't go beyond behavioural intentions (Weiss, Girandola & Colbeau-Justin, 2011)

Inappropriate messages lead to inappropriate behaviour

70%

Declare having appropriate behavior



27%

Effectively have appropriate behavior

Cartier & Colbeau-Justin, 2007

A national effort to reduce vulnerability in France

- Seismic Plan created in 2005, for 6 years
- Launched in the PACA region in 2008:
 - Information & communication
 - Knowledge and hazards
 - Urbanism
 - Preparation for crisis management
- Research program: REVDOL (Reduction of vulnerability and tool development) = CSTB, CNRS, LPS

Goals

- Empirical goals:

- Identify what encourages and what stalls preventive and protective behaviour when faced with risks
- Develop a simple and easily applicable method capable of improving protective behaviour

- Theoretical goals:

- Develop a new behaviour change paradigm using social comparison theory and self-other substitution
- Understand the underlying processes and mechanisms to self-other substitution

The background is a solid red color. It is decorated with faint, semi-transparent silhouettes of various autumn leaves, including maple and oak leaves, scattered along the left and right edges.

Theoretical framework

Pre-existing behaviour change techniques

- **Commitment communication** (Joule, Girandola & Bernard, 2007; Joule, Bernard & Halimi-Falkowicz, 2008), based on commitment theory (Kiesler, 1971)
- **Induced hypocrisy** (Aronson, Fried & Stone, 1991), based on cognitive dissonance (Festinger, 1957)

Pre-existing behaviour change techniques

Good potential for inducing pro-environmental behaviour, but...

Strict conditions for "real life" application

Costly and complicated investigations prior to application

Often restricted to small populations

The background is a solid red color with a pattern of faint, stylized autumn leaves in various shades of red and orange, scattered across the surface.

Towards a new behaviour change paradigm

Mute zone of social representations

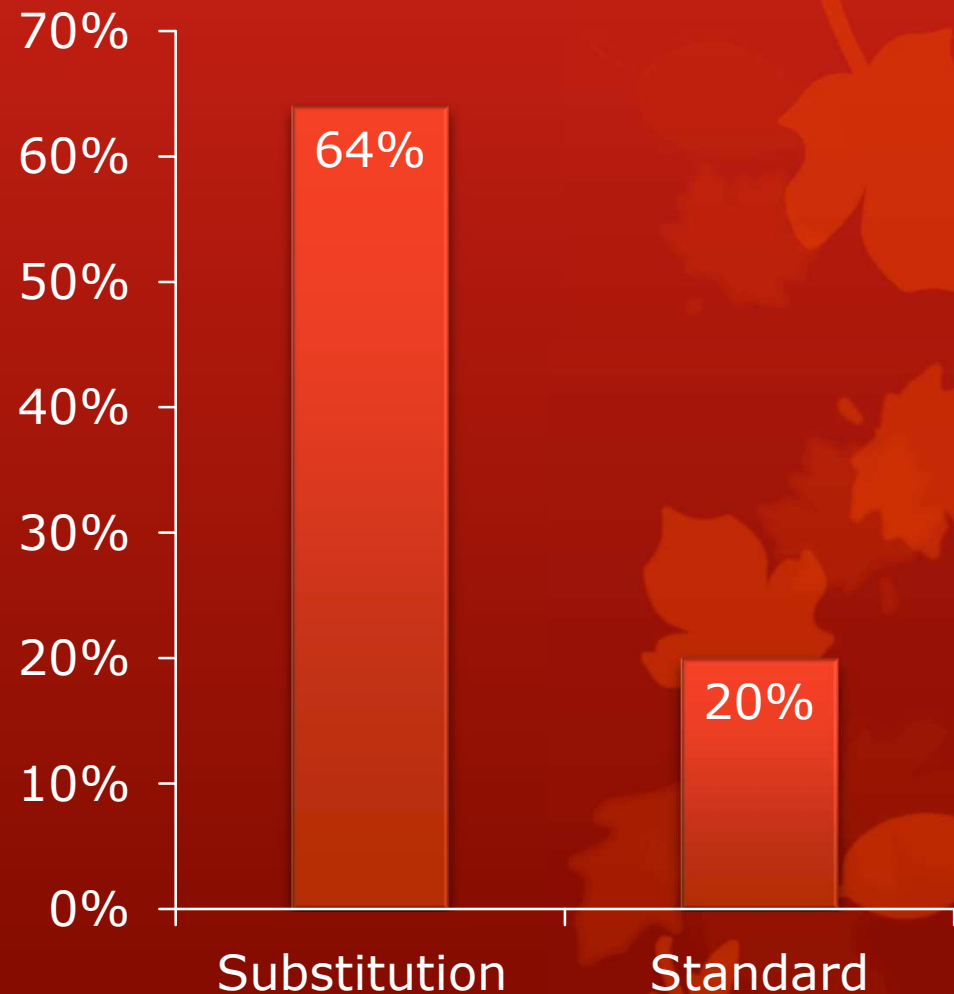
- Social representation (Moscovici, 1961) =
A set of opinions, attitudes and beliefs
about a given object (Abric, 2003)
- Mute zone of social representations =
When talking about *sensitive* topics,
people tend to "mask" socially
undesirable/counter-normative opinions
(Guimelli, 1998; Guimelli & Deschamps,
2000)

Mute zone of social representations

- Technique to access masked opinions
- Self-other substitution (based on Jellison & Green's self-presentation paradigm, 1981)
- Self-other substitution: People are asked to express the opinion of a more general population, such as the *French in general*

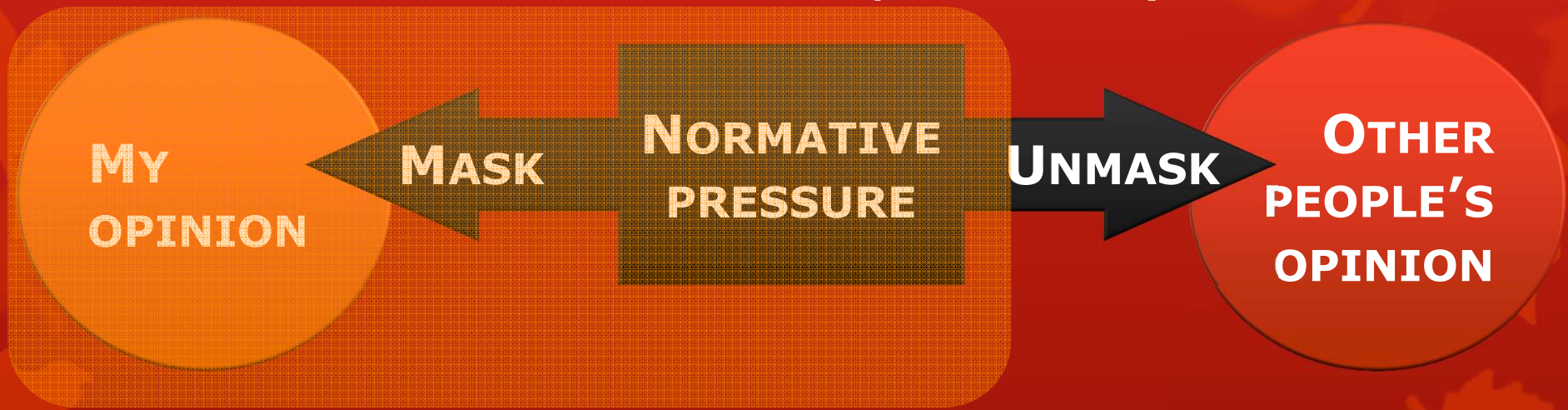
Mute zone of social representations

- Study on the social representation of gypsies (Guimelli & Deschamps, 2000)
- Verbal associations either in **standard** or **substitutive** contexts
- "Stealing" brought up by more people through self-other substitution



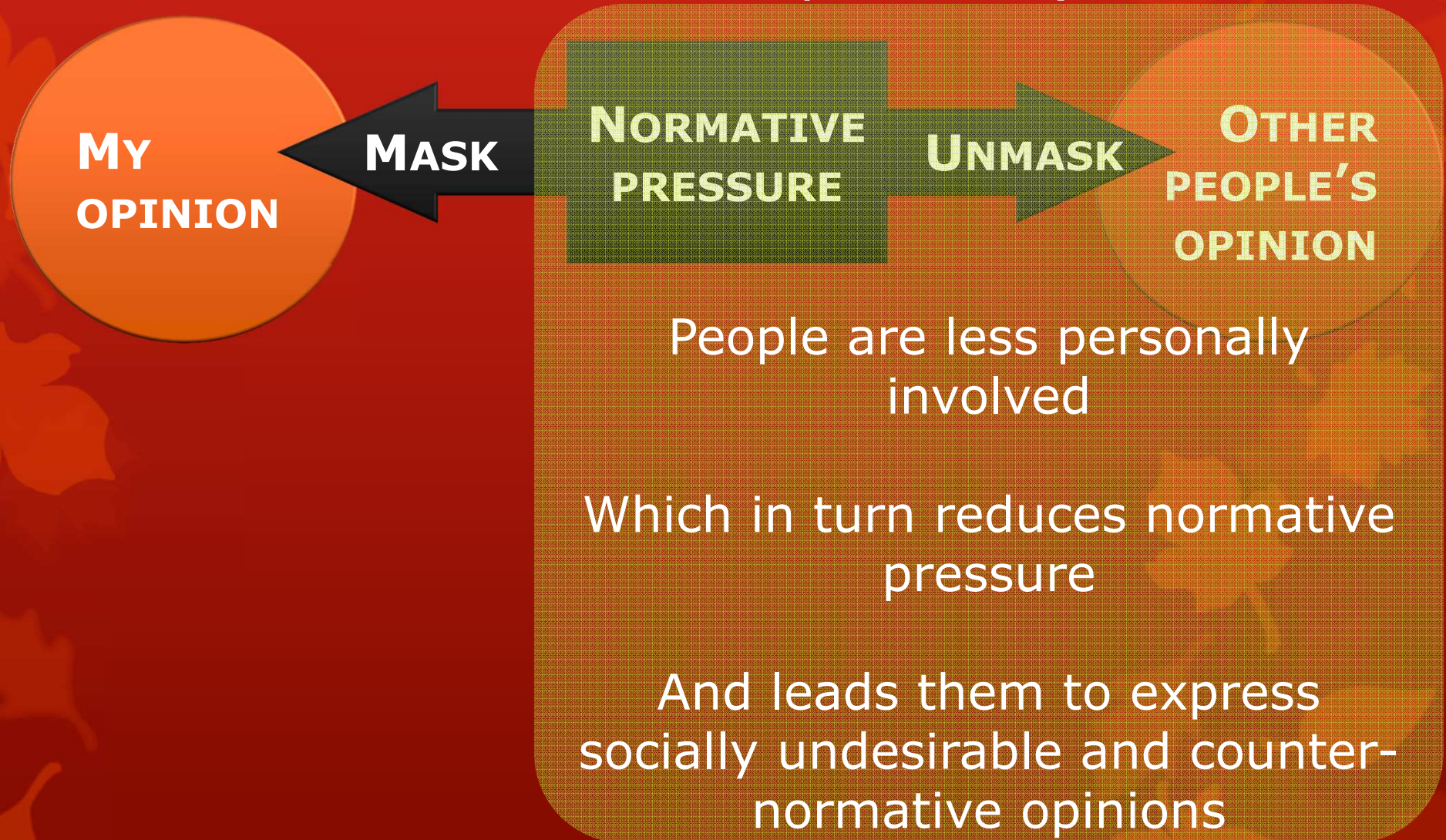
Self-other substitution

Reduction of normative pressure (Guimelli, 1998; Guimelli & Deschamps, 2000)



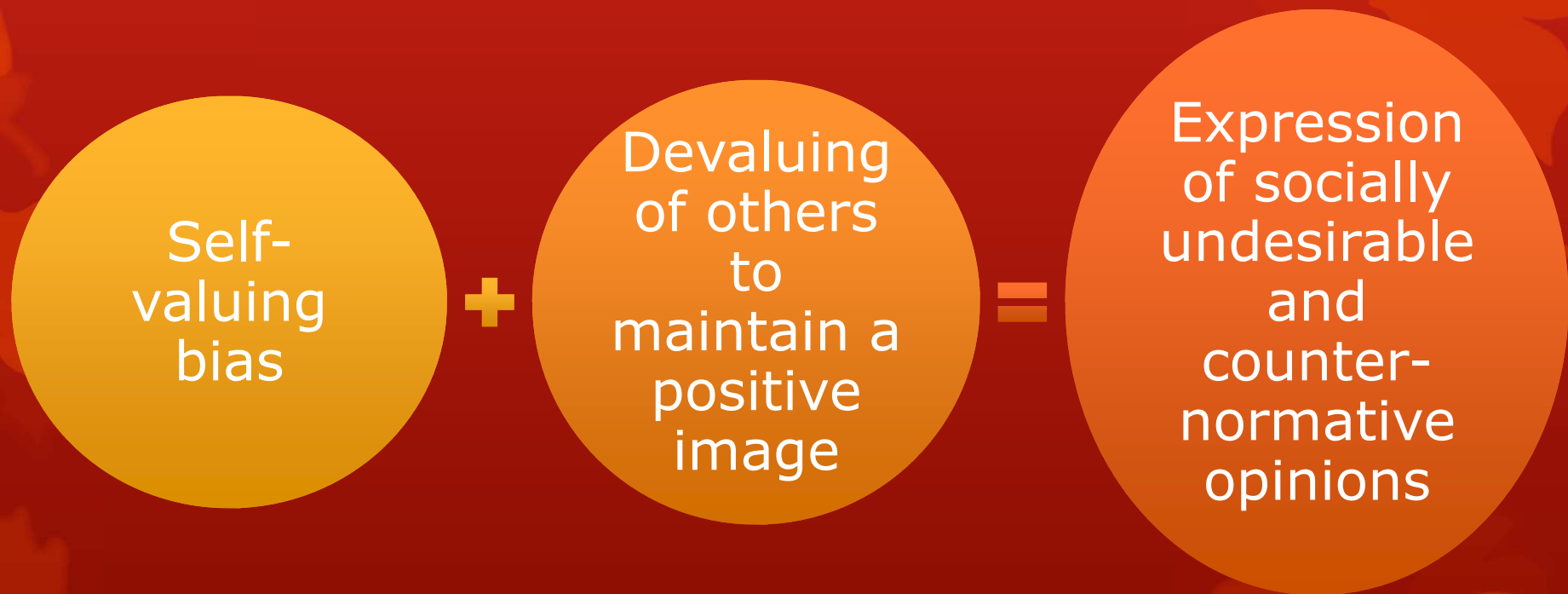
Self-other substitution


Reduction of normative pressure (Guimelli, 1998; Guimelli & Deschamps, 2000)



Self-other substitution

Social comparison (Chokier & Moliner, 2006;
Chokier & Rateau, 2010)



- 
- The background is a solid red color with a pattern of faint, stylized autumn leaves in various shades of red and orange, scattered across the surface.
- If people attempt to make themselves look better than other people, then this should be followed through with corresponding behaviour

Self-declared pro-environmental behaviour (Rateau, Lopez & Charles, 2010)

- New Ecological Paradigm Scale (NEP; Dunlap, 1978; Dunlap *et al.*, 2000) – Measures pro-environmental orientation
- Environmental awareness is to be considered a valued social norm (Stern *et al.*, 1995)
- 407 first-year psychology students

Self-declared pro-environmental behaviour (Rateau, Lopez & Charles, 2010)

1. NEP Scale

Standard
context
(N=106)

Pro-normative
context
(N=101)

Self-other
substitution
(N=98)

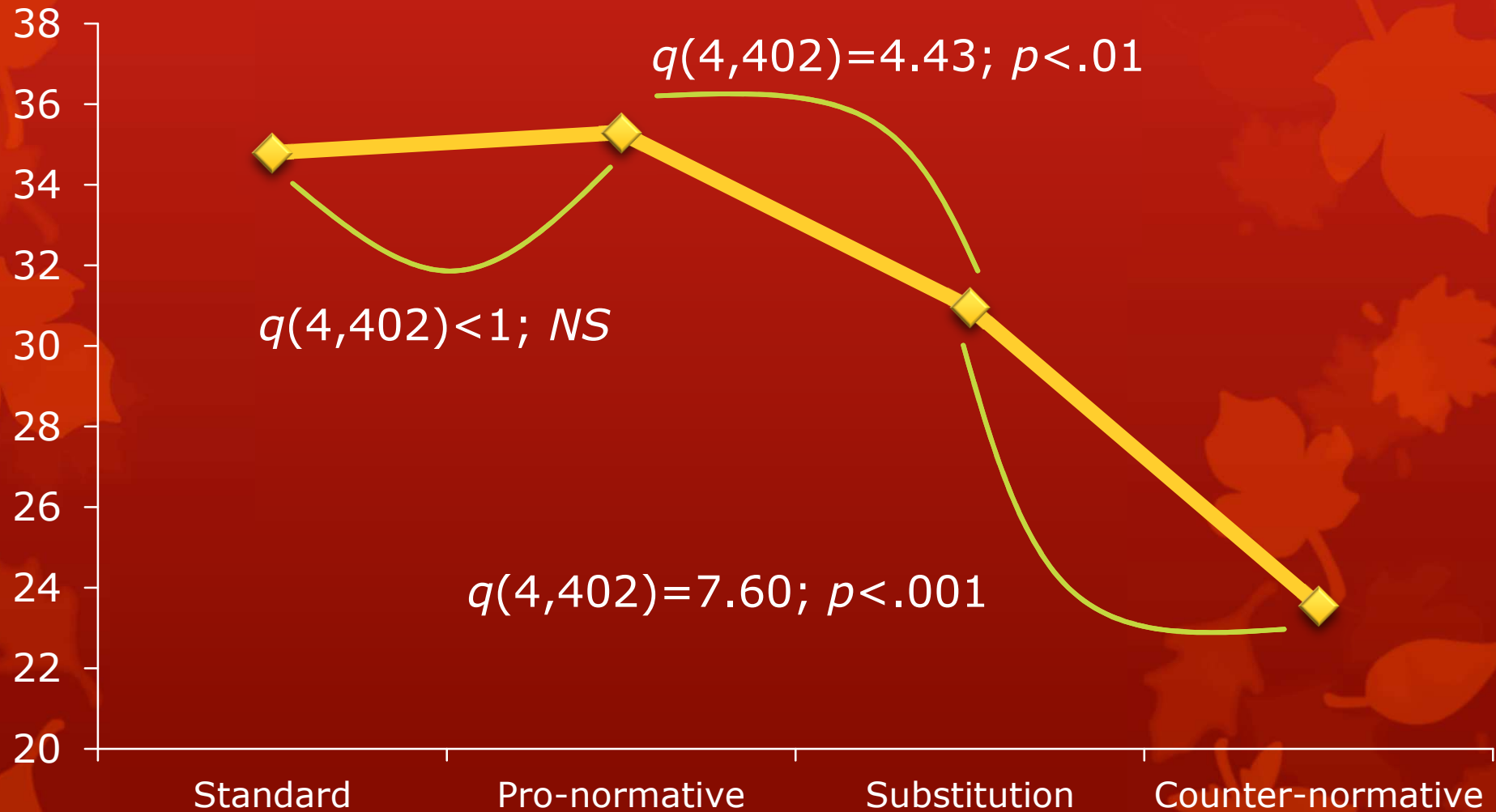
Counter-
normative
context
(N=102)

2. Self-declared pro-environmental
behaviour

Standard
context
(N=407)

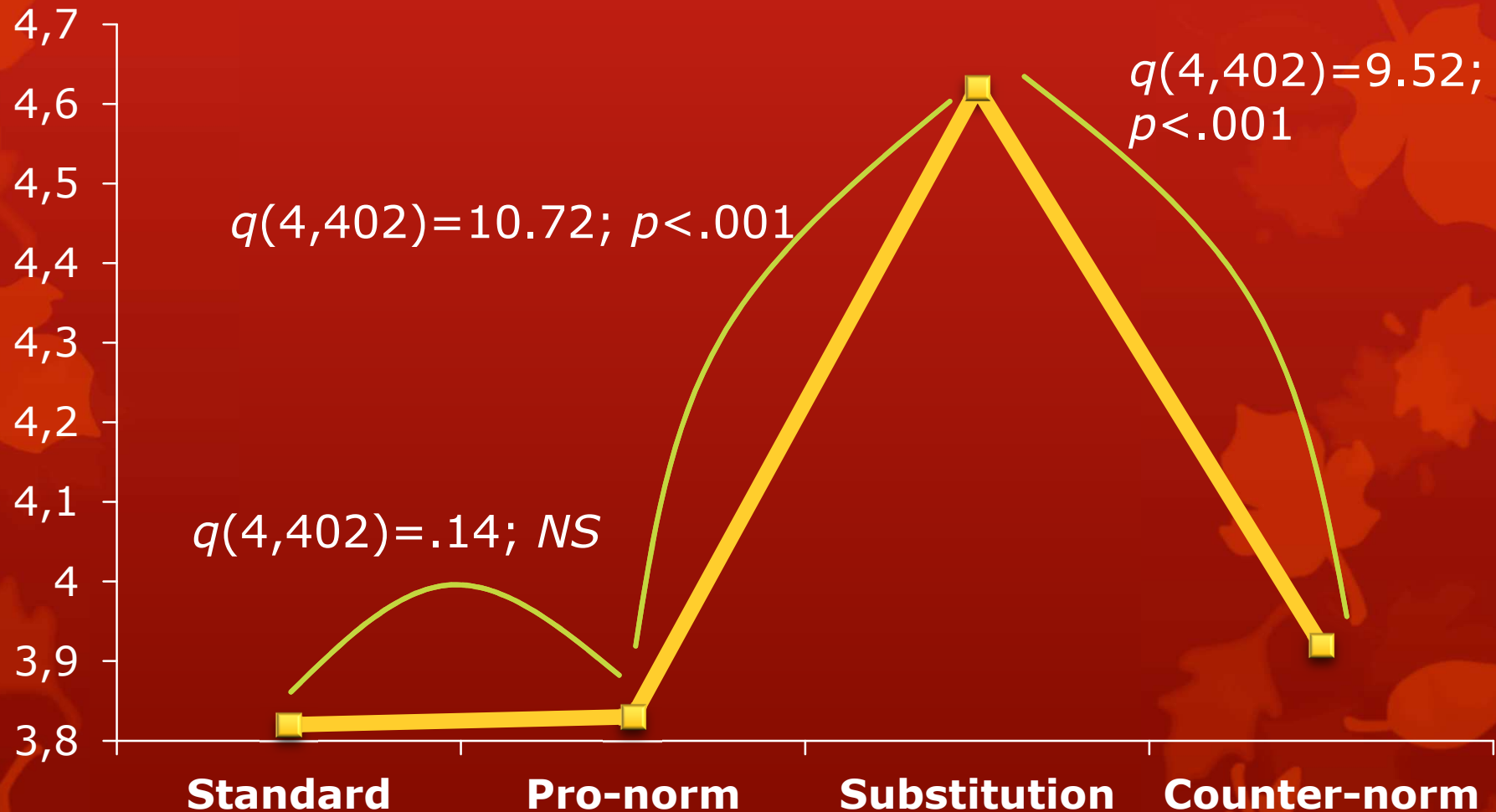
NEP Scale

$F(3,403)=31.74; p<.001$



Self-declared pro-environmental behaviour

$F(3,403)=27.32; p<.001$



Self-declared pro-environmental behaviour

- It appears that self-other substitution can induce more favorable self-declared behaviour...
- ...But one study is not enough!

The background is a solid red color with a pattern of faint, semi-transparent autumn leaves in various shapes and sizes scattered across it. The leaves are in shades of red and orange, matching the background color.

Experimental studies

Behavioural intentions to use dry toilets

- Examine the effects of self-other substitution on behavioural intentions...
- ...and in the case of group discussion
- 120 first year psychology students
- Variables:
 - Context: Substitution vs. Standard
 - Situation: Individual vs. Collective

Behavioural intentions to use dry toilets

K. Lewin (1943) – Changing food habits

Group
discussion
32%

Individual
decision
3%

Group members adopt new norms if the rest
of the group does the same

Procedure

Group discussion


1. Neutral text about dry toilets
2. Questionnaire measuring behavioural intentions (pretest)
3. Group discussion for 45 minutes (6 participants)
 1. Standard context
 2. Substitutive context
4. Questionnaire measuring behavioural intentions (posttest)

Individual discussion

1. Neutral text about dry toilets
2. Questionnaire measuring opinions about dry toilets
 1. Standard context
 2. Substitutive context
3. Questionnaire measuring behavioural intentions

Measuring behavioural intentions

Questionnaire based on Ajzen & Fishbein's (1975) 5 levels of behaviour specificity

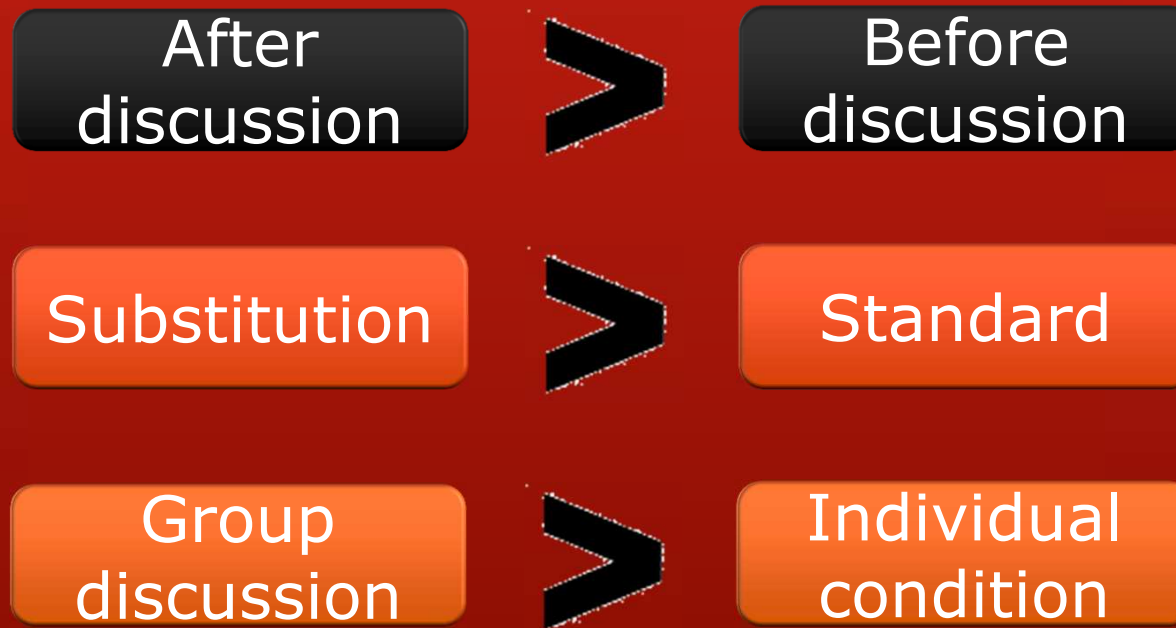


I intend to install dry toilets at home as soon as possible

If I have the opportunity, I intend to try dry toilets at least once

Hypothesis'

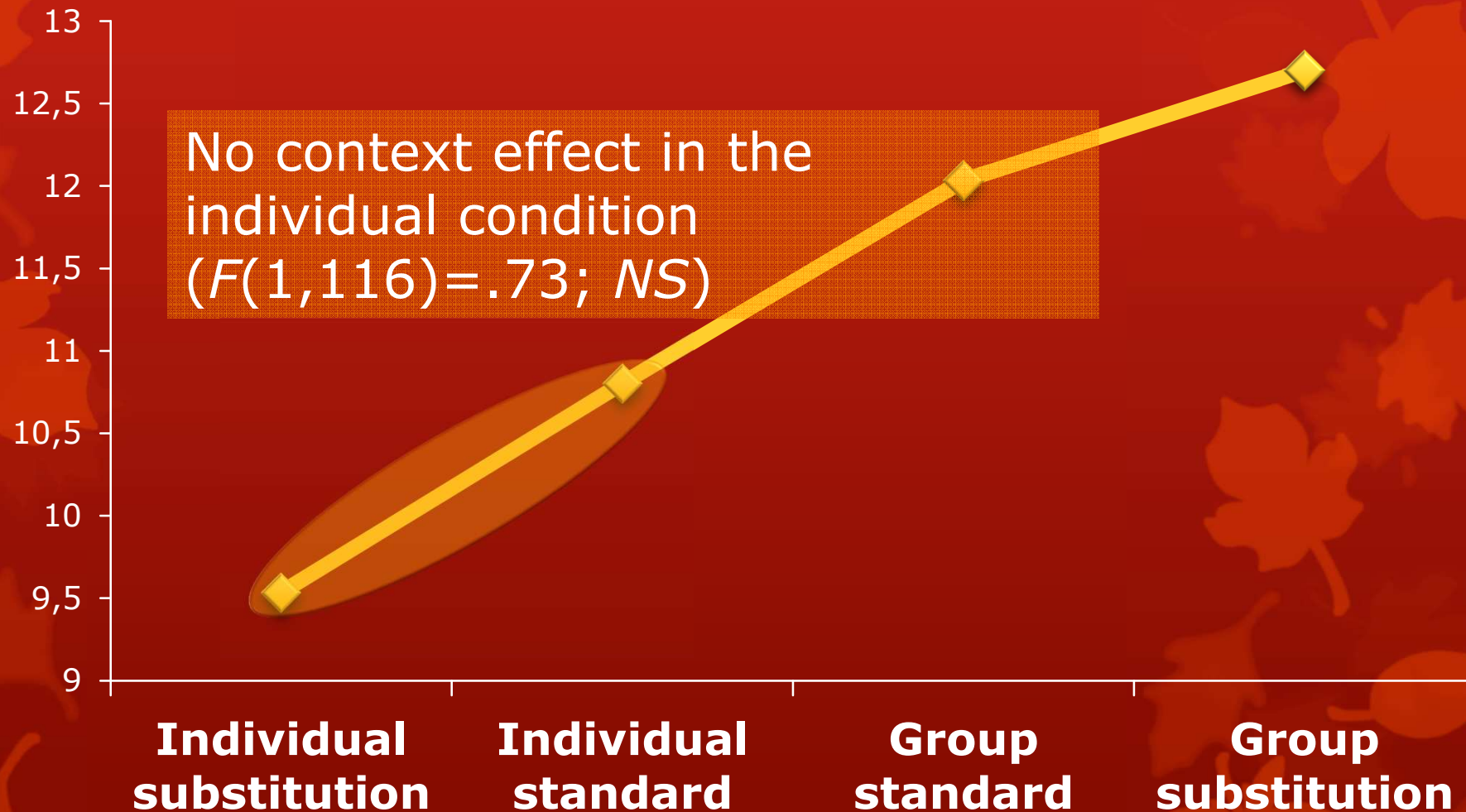
- Behavioural intentions...



Results

Behavioural intentions

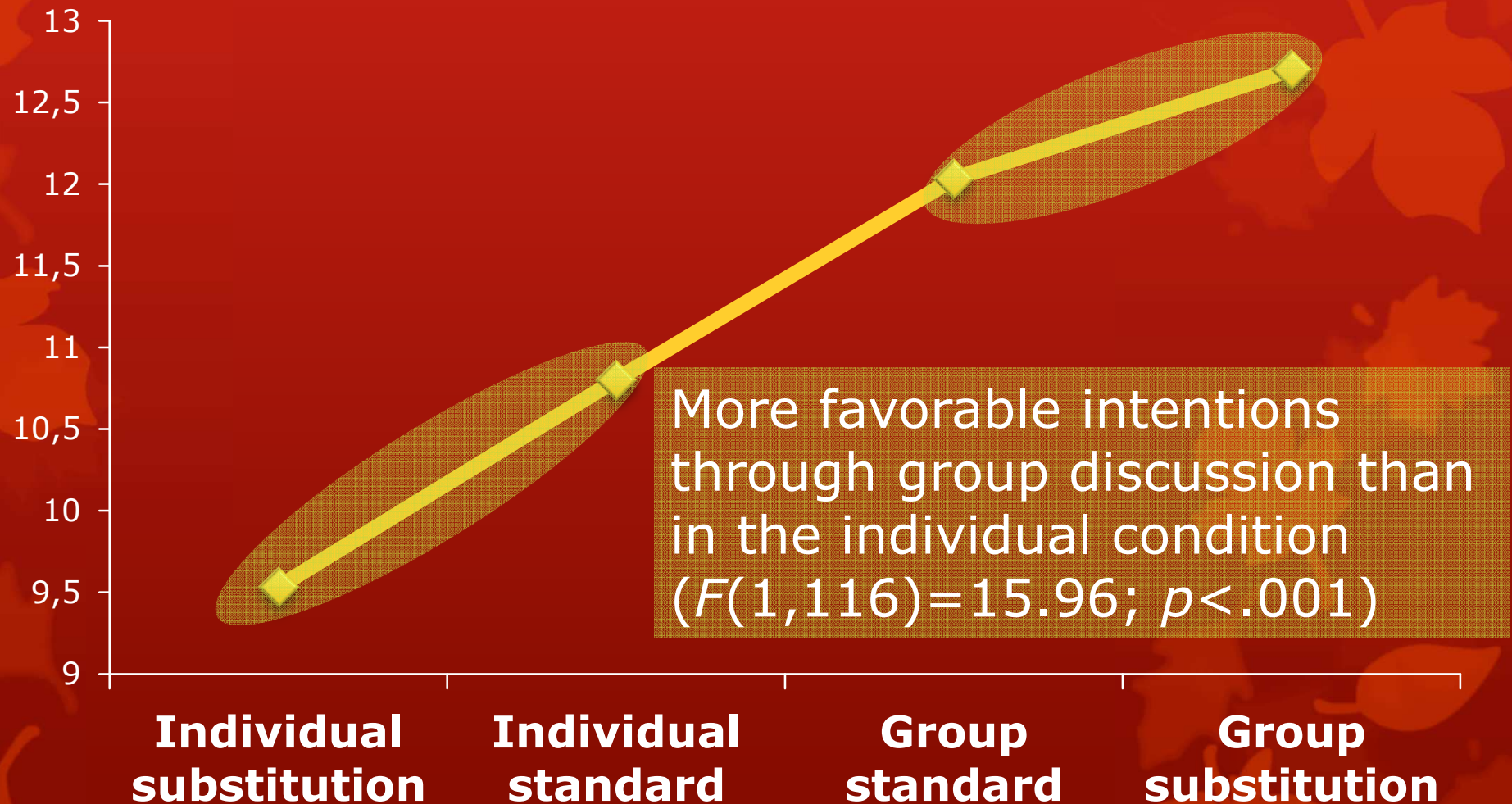
$F(3,116)=6.44; p<.004$



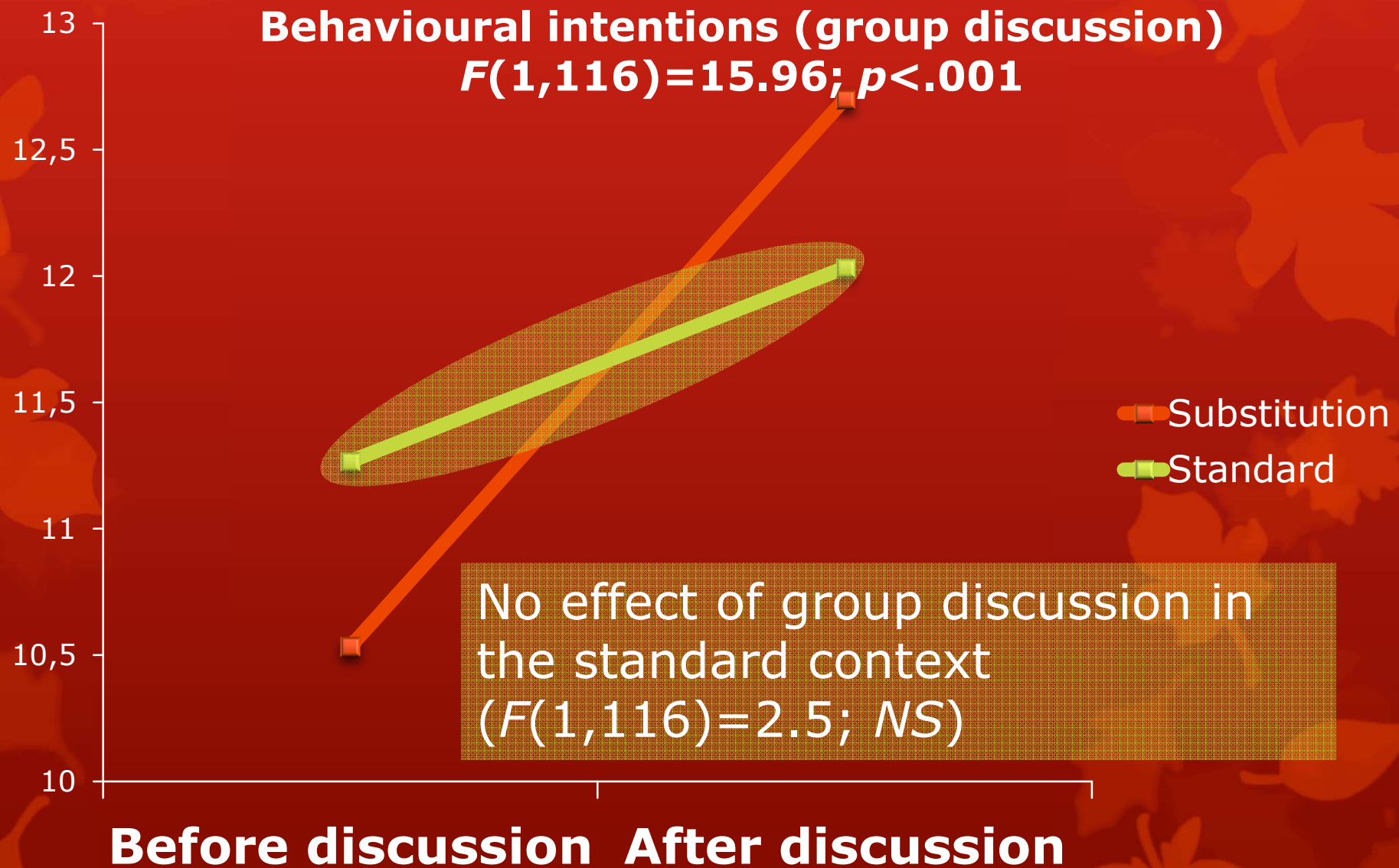
Results

Behavioural intentions

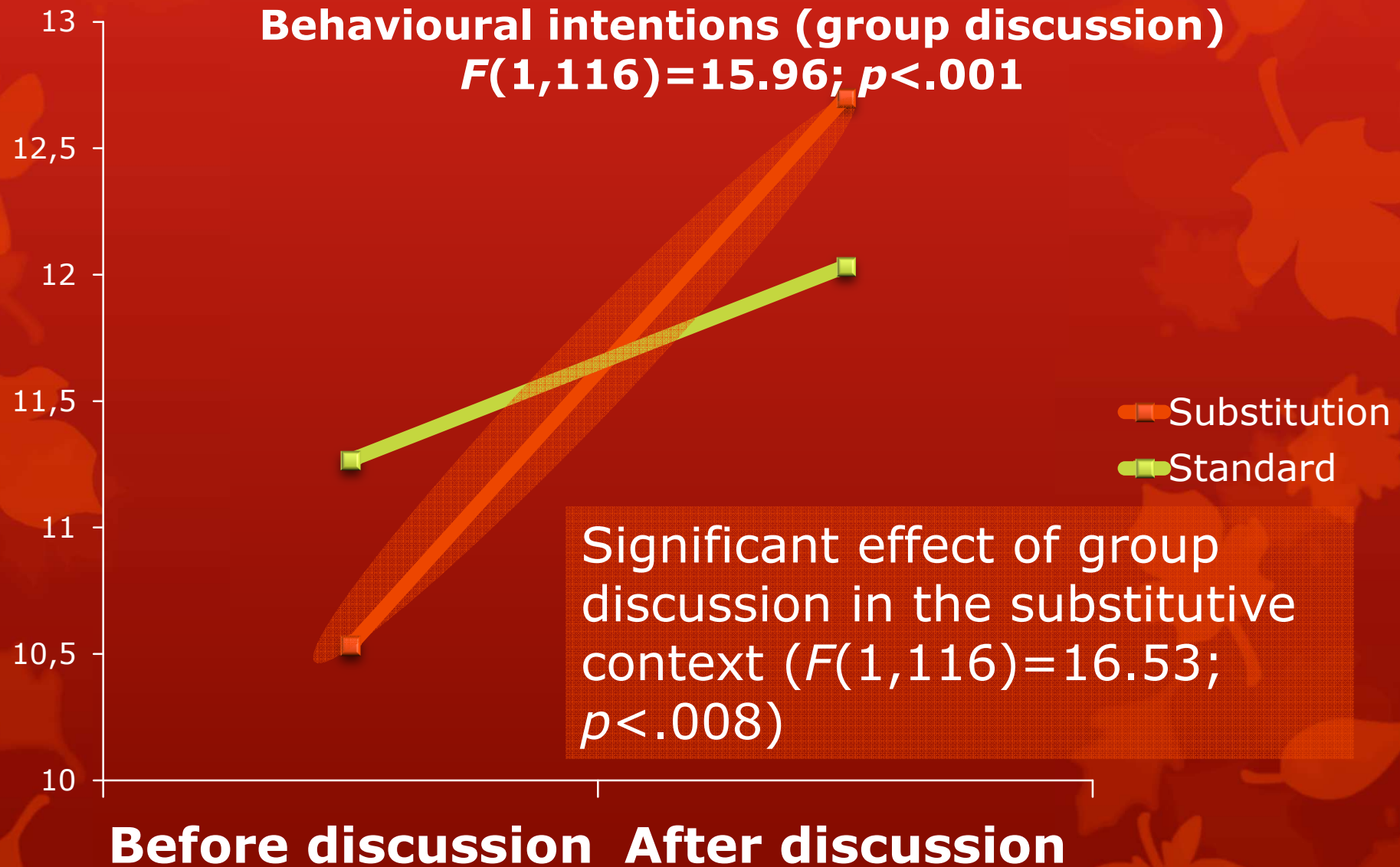
$F(3,116)=6.44; p<.004$



Results



Results



Conclusions

- No effects in the individual condition, but this can be explained by the *repulsive* nature of dry toilets (Dellström-Rosenquist, 2005), rendering group discussion essential (Lewin, 1943)
- Substitution amplified the effects of group discussion on behavioural intentions

Conclusions

- Promise in the field of behaviour change...
- Next step:
 - Measure effective behaviour
 - Investigate self-other substitution using more "pro-normative" or socially desirable objects

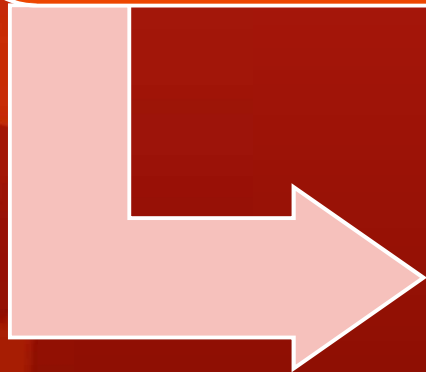
Comparing objects in terms of normative intensity

- Compare three contexts (substitution, standard, social comparison)...
- ...and a normative object (protection of the environment) vs. a non-normative object (collective gardening)
- Effects on behavioural intentions to get involved in a collective gardening project

Procedure

Opinion
questionnaire

- Protection of the environment
- Collective gardening
- Standard, substitution or social comparison



Behavioural
intentions

- Standard context for all participants
- Involvement in a collective gardening project

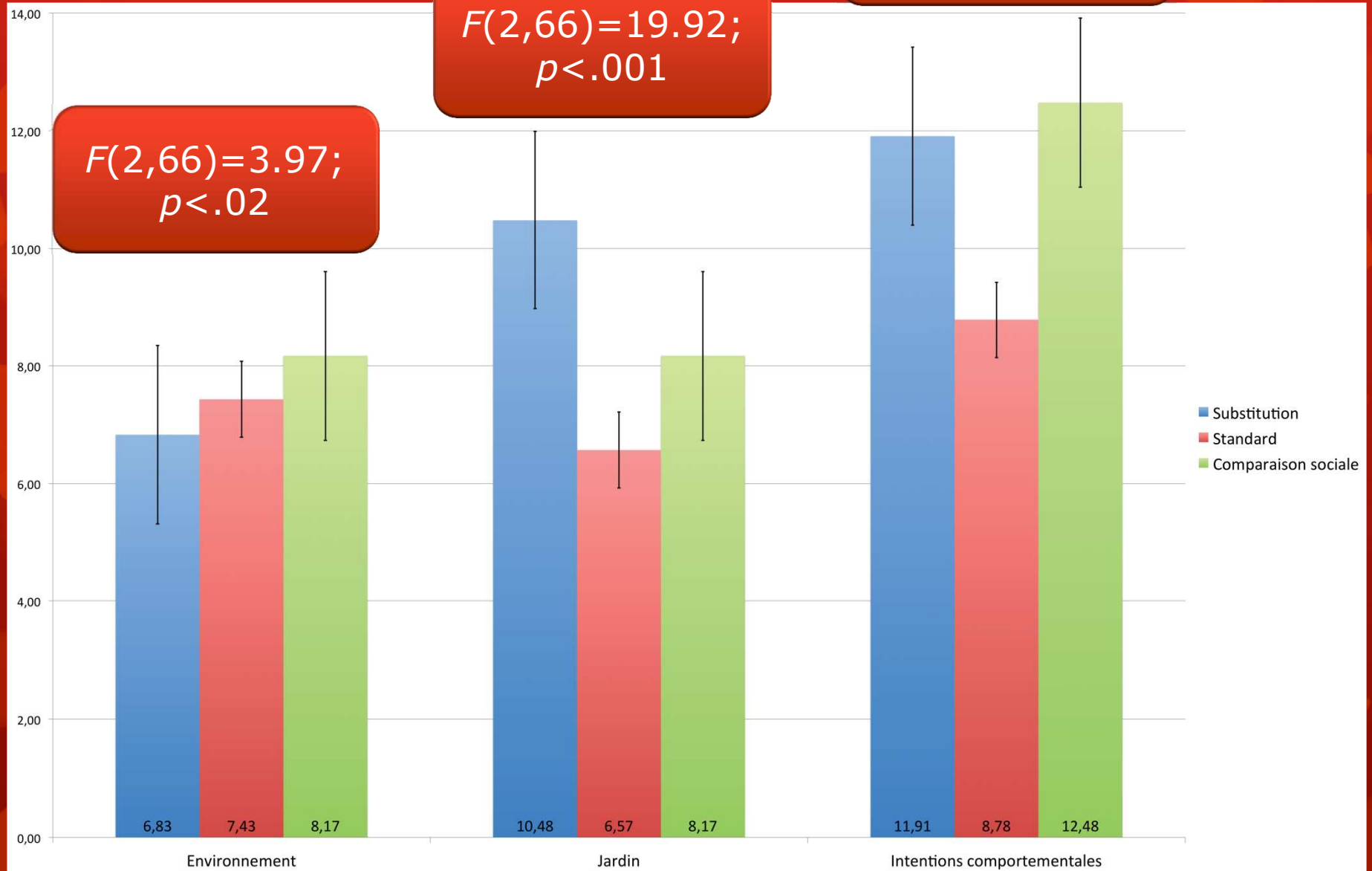
Population

- 69 first year psychology students
- 73.92% women
- Average age: 20.55; SD: 4.44

$F(2,66)=16.82;$
 $p<.001$

$F(2,66)=19.92;$
 $p<.001$

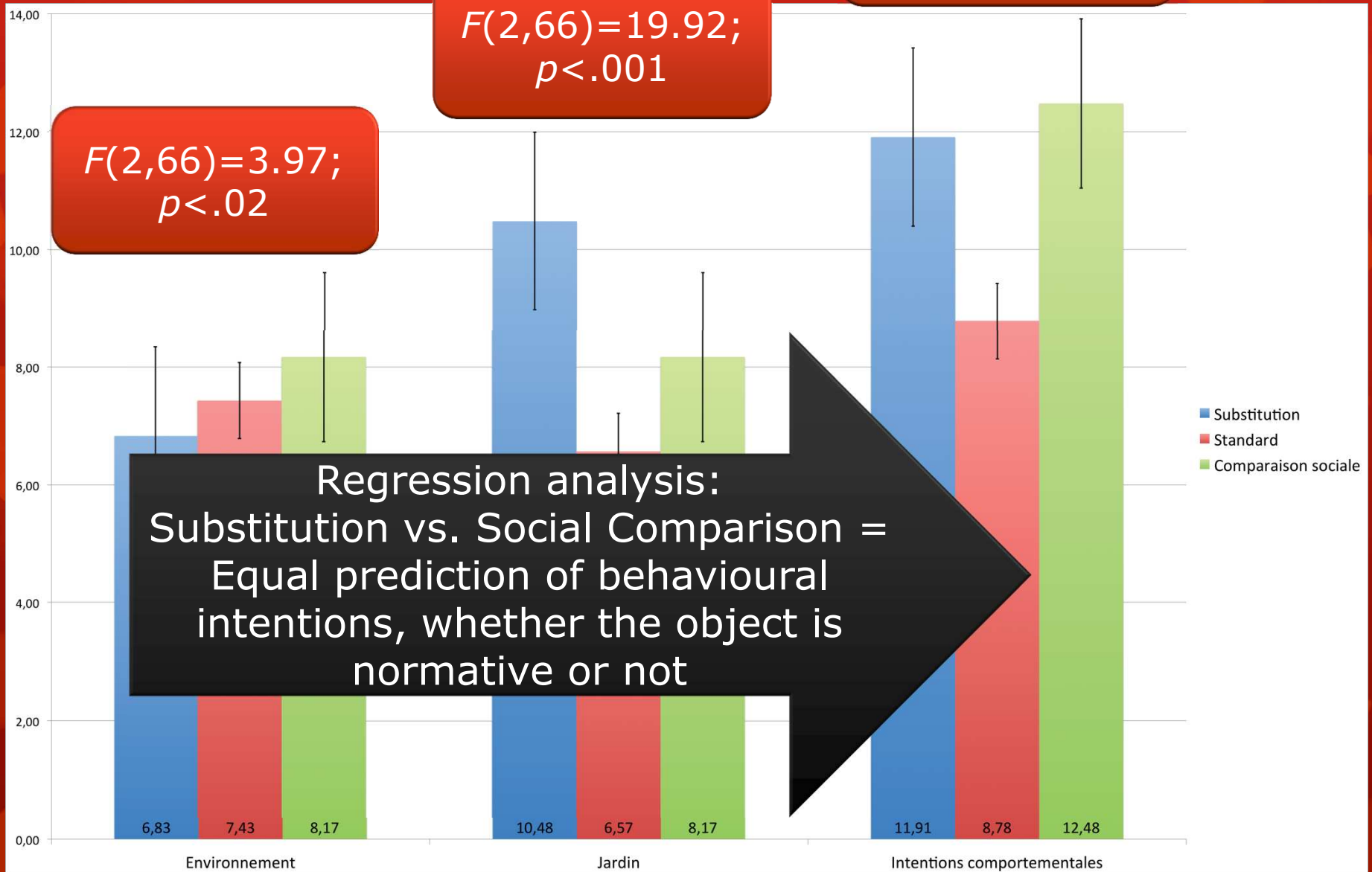
$F(2,66)=3.97;$
 $p<.02$



$F(2,66)=16.82;$
 $p<.001$

$F(2,66)=19.92;$
 $p<.001$

$F(2,66)=3.97;$
 $p<.02$



Conclusions

- Substitutive or social comparative contexts seem to induce change in behavioural intentions...
- ... Whether or not the object is socially desirable
- We explain this by the intervention of a social comparison process

The background is a solid red color with a pattern of faint, stylized autumn leaves in various shades of red and orange, scattered across the surface. The leaves are mostly concentrated along the left and right edges, with some in the center.

Ongoing research

Measuring normative intensity



Counter-normative

Normatively neutral

Normative

- Activating social norms has a positive effect on behaviour change (Cialdini, Reno & Kallgren 1990; Harland, Staats & Wilke, 2007; Cialdini *et al.*, 2006)
- But a behaviour change technique that only works on "socially desirable" objects seems pointless!
- First step: develop a method using a pro-normative/counter-normative procedure to determine the normative intensity links to an object

The social representation of earthquakes

- Social representations of risks are rarely studied
- Activation of central vs. peripheral elements of a social representation to induce behaviour change



Thankyou!