# Narrative tools for smoking prevention in adults. Effects of narrative voice and audience-character similarity

Juan-José Igartua, Laura Rodríguez-Contreras, María Marcos-Ramos, Beatriz González-de-Garay & Francisco Javier Frutos

University of Salamanca (Spain)

# Research goal

- Tobacco use has been linked to multiple health problems (American Cancer Society, 2018; World Health Organization, 2017).

- Smoking is also the biggest preventable cause of premature death.

- Improving the effectiveness of **campaigns for smoking prevention** is an important goal in public health management and health communication.

- **Present Research**: focuses on smoking prevention using *narrative messages*.





WARNING:
Cigarettes cause cancer.

# Narrative messages on smoking prevention?

- **Short personal stories** featuring a **former smoker** that serve as a model to provoke changes in attitudes and behaviours in active smokers (Dunlop, Wakefield & Kashima, 2010; Kim, 2019).

- **Aim**: to induce in the audience the desire to **quit smoking**, reinforce **self-efficacy expectations** and increase the **perceived effectiveness of the preventive response** (quit smoking).

*Tips from Former Smokers*
Centers for Disease Control and Prevention, CDC)

### Christine's Story

Español (Spanish)



Meet Christine

On This Page
- Christine's Videos
- Christine's Biography
- More About Christine
- Additional Resources
- More Related Stories

During high school, Christine wanted to fit in, so she began smoking at age 16. She became addicted and continued smoking for 28 years.

In 2007, at age 44, Christine's life would change forever. She quit smoking when a biopsy of a growth inside her cheek revealed oral cancer. After 35 radiation treatments and chemotherapy, she seemed to be cured. But the cancer returned in 2008; this time surgery was her only option. Her third bout with oral cancer in 2009 was even more serious. She learned it had spread to her jawbone, classifying it as stage IV. Doctors had to remove half of her jaw.

https://www.cdc.gov/tobacco/campaign/tips/index.html

# Narrative Impact: Meta-analysis review

- Narrative interventions produce significant effects on the dependent variables considered (in beliefs, $r$ = .17; attitudes, $r$ = .19; behavioural intention, $r$ = .17; and behaviours, $r$ = .23), but **significant variation** in these *narrative effects* is also detected (Braddock & Dillard, 2016).

- Although narrative messages can serve as a promising health communication tool, **not all narratives are effective**.

- **An important question:** which are the "*ingredients*" of the narratives that are most effective from a persuasive point of view?

# Theoretical background: Narrative Persuasion

When it comes explaining **how** personal narratives influence individuals, **narrative persuasion** models focus on **identification with characters** and **narrative transportation** as the two principal **mechanisms**, and recent research examines how to **_increase_** these processes (de Graaf, Sanders, & Hoeken, 2016; Tukachinsky, 2014).

# Identification and transportation
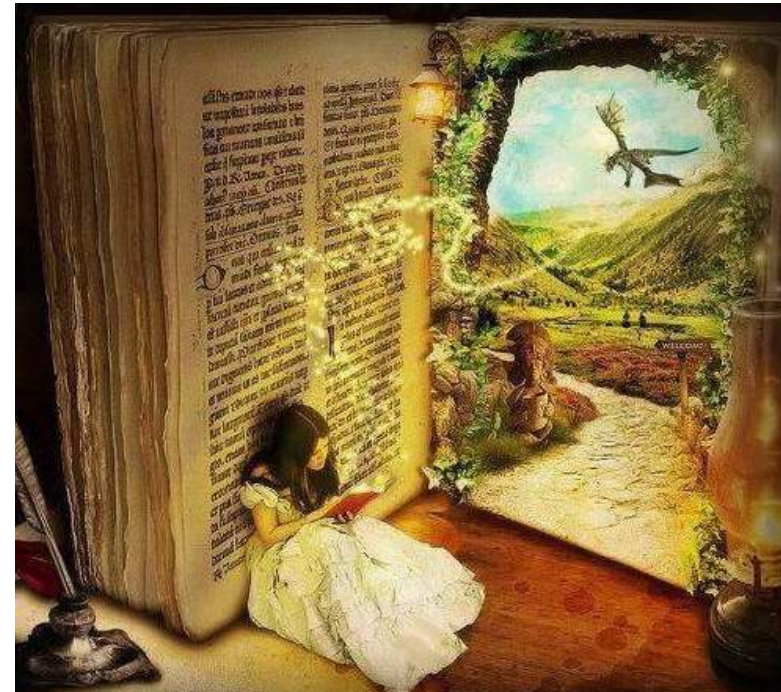
**Identification with the protagonist**

An imaginative process that involves the gradual loss of self-consciousness and the assumption of the affective and cognitive point of view of the protagonist of a narrative (Cohen, 2001).

**Narrative transportation**

Audience **focuses attention on the story**, becomes **emotionally involved** in it, and forms clear and **vivid mental images** about the different elements of the story (Green & Brock, 2000).
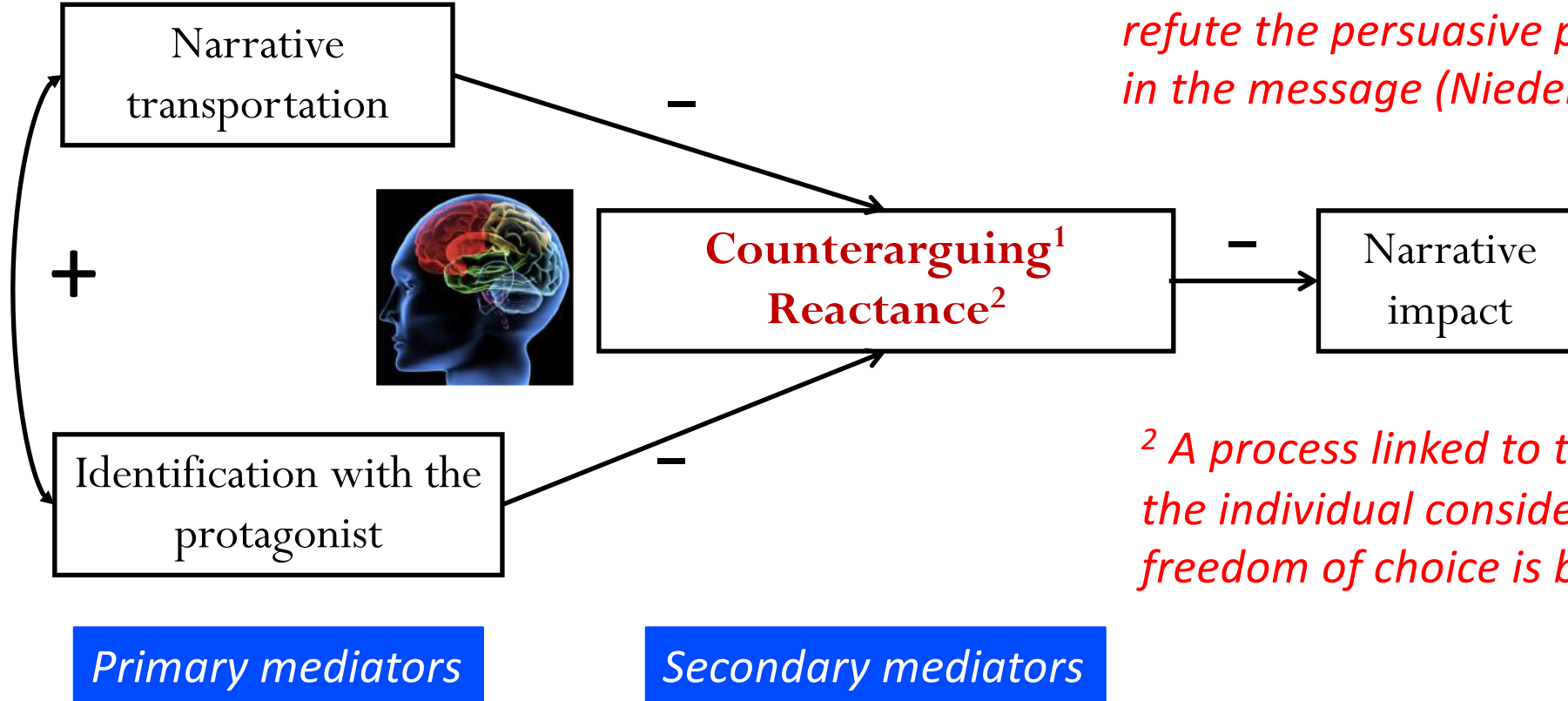
**Empathy and merging** with the character

**Engagement or immersion** with the story and the events narrated



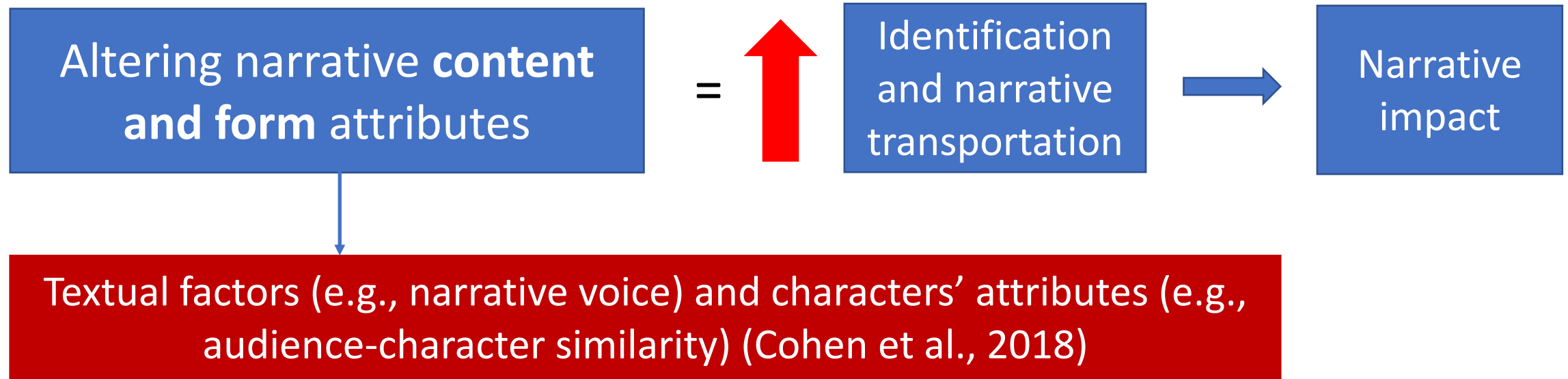imagine

# Mechanisms of Narrative Persuasion

Narrative transportation and identification with the protagonist induce a persuasive influence because both processes contribute to **lowering the critical capacity** of the audience (**counterarguing** and **reactance** are reduced) (Moyer-Gusé, 2008).



*[1] The generation of thoughts that explicitly refute the persuasive proposal incorporated in the message (Niederdeppe et al., 2012)*

*[2] A process linked to the resistance in which the individual considers that his/her freedom of choice is being threatened*

Diagram:

- Narrative transportation
- Identification with the protagonist
  - (+) between the two primary mediators
  - (−) → Counterarguing[1] Reactance[2]
  - (−) → Counterarguing[1] Reactance[2]
- Counterarguing[1] Reactance[2]
  - (−) → Narrative impact

**Primary mediators**

**Secondary mediators**

# How to increase identification and narrative transportation?
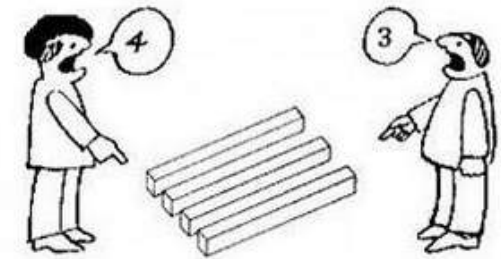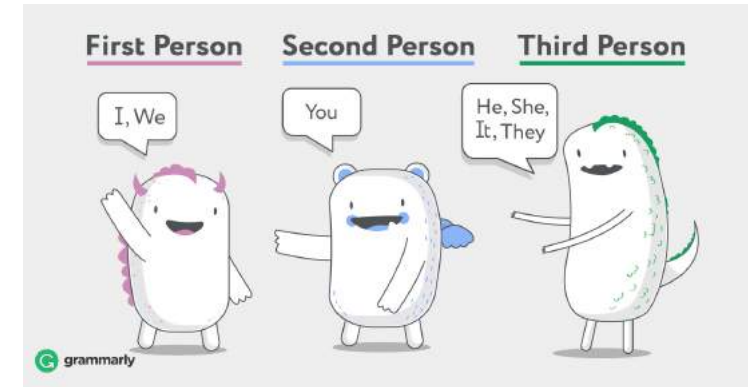
# Character similarity

- **Similarity** describes a situation in which the audience shares certain demographic, psychological, or social features with the protagonist of the message.
- Similarity is a multidimensional construct and previous research has only focused on the effect of demographic similarity (e.g.., Cohen et al., 2018).
- Empirical evidence is inconclusive (e.g., Tukachinsky, 2014).
- **Behavioural similarity**: depending on the degree of tobacco dependence (character and audience).

How does the protagonist of the narrative message have to be in order for the campaign to be effective?
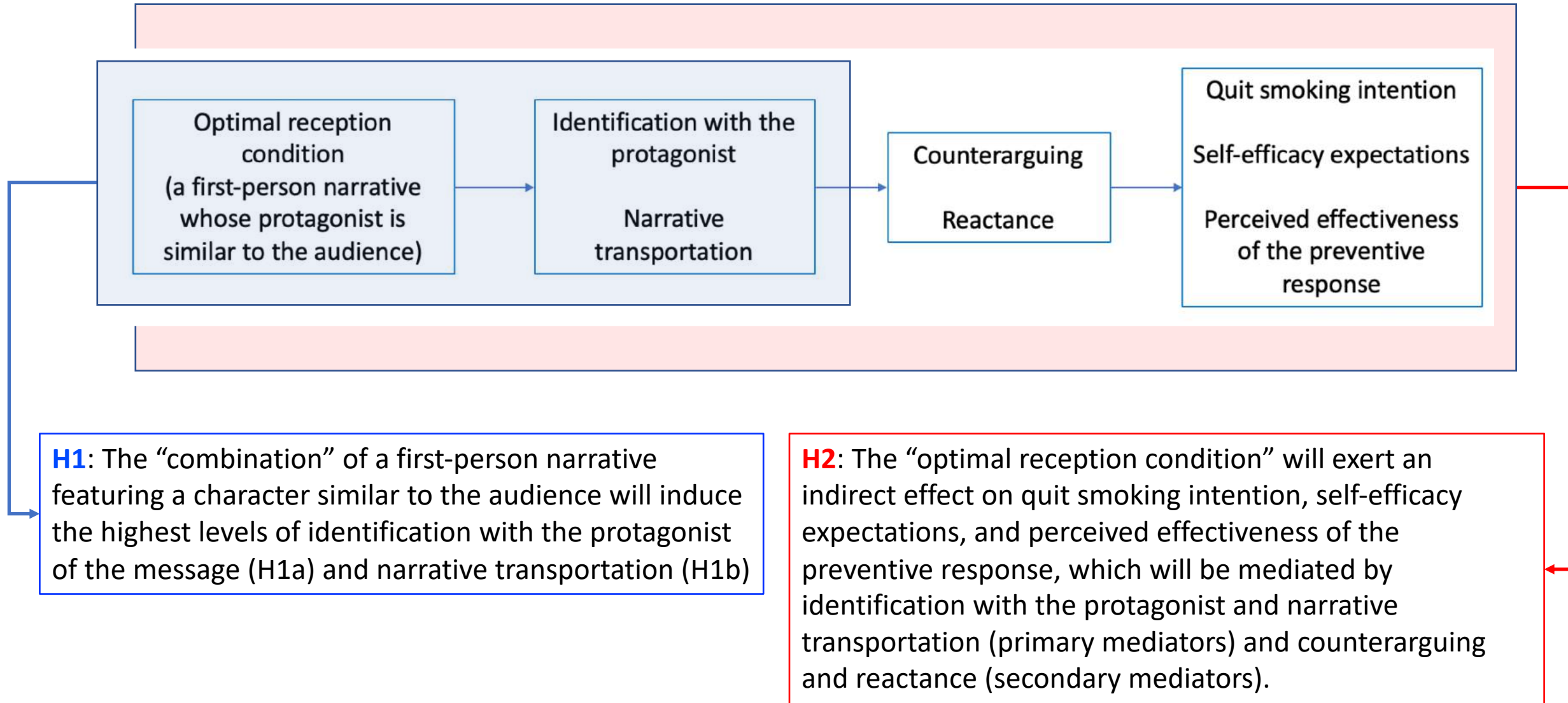
# Narrative voice (point of view)

- The **perspective** adopted by the narrator and from which the story is told (Christy, 2018):
  - First: "I felt bad for continue smoking".
  - Second: "You felt bad for continuing to smoke".
  - Third person: "Javier felt bad for continuing to smoke".
- **First-person messages** (versus third-person narratives) are perceived as more personal, are easier to understand, increase perspective-taking and identification with the protagonist, and are more effective in inducing risk perception (e.g., Chen et al., 2017).
- The **empirical evidence** regarding to the effect of narrative voice on smoking prevention is scarce and **inconsistent** (e.g., De Graaf et al, 2016).

# Hypothesized Serial Multiple Mediator Model



**H1**: The "combination" of a first-person narrative featuring a character similar to the audience will induce the highest levels of identification with the protagonist of the message (H1a) and narrative transportation (H1b)

**H2**: The "optimal reception condition" will exert an indirect effect on quit smoking intention, self-efficacy expectations, and perceived effectiveness of the preventive response, which will be mediated by identification with the protagonist and narrative transportation (primary mediators) and counterarguing and reactance (secondary mediators).

# Method

| Pre-test | Independent Variable 1 | Independent Variable 2 | Post-test |
|---|---|---|---|

Filter questions (*)

Fagerström test (participants **tobacco dependence**)

Socio-demographic information
50% women,
Mean age = 35.68 ($SD$ = 10.85, range: 18-55).

[Narrative voice]

First-person versus third-person narrative

[(Protagonist) Degree of tobacco dependence]

Behavioural similarity between the protagonist and the audience (low, high)

Manipulation checks

Identification ($\alpha$ = .93)

Transportation ($\alpha$ = .89)

Counter-arguing ($\alpha$ = .72)

Reactance ($\alpha$ = .85)

Quit smoking intention ($\alpha$ = .82)

Self-efficacy expectations ($\alpha$ = .92)

Perceived effectiveness of the preventive response ($\alpha$ = .78)

Participants are randomly assigned to 4 groups of even size (N = 170)

**[2 x 2 between-subjects factorial design]**

Sample: 680 **adult smokers (*)**

*Open Science Framework:* https://osf.io/y3c8f/

Online experiment: opt-in online panel of QUALTRICS

# #HENAR_Smoking

**Attribute of the protagonist of the narrative (Behavioural similarity )**

*What type of former smoker is most effective?*
**"Matching"** depending on the **degree of tobacco dependence** of the protagonist (low, high) and the audience (Fagerström test).

**Low**: "… I was not so engaged, **I only smoked 9 or 10 cigarettes per day**".

**High**: "… I was very engaged, **I smoked more than a pack of cigarettes a day**".

**Attribute of the narrative (Narrative voice)**

**First-person narrative**

*"My name is Miguel, I am 35 years old and I started smoking at 15 (…) It's been a year since I quit smoking"*

**Third-person narrative**

*"Miguel is 35 years old and started smoking at 15 (…) It's been a year since Miguel stopped smoking"*

**Mi nombre es Miguel, tengo 35 años y empecé a fumar a los 15.** **A los pocos meses ya fumaba a diario, aunque nunca fui de esas personas que se encienden un cigarro recién levantadas, no estaba tan enganchado, sólo fumaba 9 o 10 cigarrillos al día.** Durante casi veinte años fumé prácticamente a diario, y me daba igual que me dijeran que el tabaco mata. Yo era muy joven para pensar en eso. Hace un año sufrí un amago de infarto. Esto me hizo entender que ya no era tan joven y que mi cuerpo ya no respondía como antes. Me asusté. El médico me dijo que lo primero que tenía que hacer era dejar de fumar para que mi cuerpo se recuperara y que con el tiempo sería como si nunca hubiera fumado.

Las primeras semanas fueron muy difíciles. Me dolía muchísimo la cabeza, tenía ansiedad y me costaba mucho concentrarme en el trabajo (no podía parar de pensar en encenderme un cigarro, en darle una última calada). Además, como estaba todo el día ansioso e inquieto, me costaba dormir. Creía que no iba a ser capaz, sólo el miedo a sufrir un infarto me hacía tirar para adelante. A los tres meses empecé a ver algunos cambios en mi cuerpo: le sacaba sabor a la comida, mi olfato también mejoró e incluso notaba que respiraba mejor. Pensé que hacer deporte me vendría bien y así fue… me sentía más relajado, ya no tenía problemas para dormir, mi tensión arterial bajó y desapareció por completo la tos que siempre tenía al levantarme. **Además, empecé a ahorrar, más de 80 euros al mes, al dejar de comprar tabaco.**

**Ya hace un año que dejé de fumar.** Ahora me siento mucho mejor, más libre: ya no tengo que estar pendiente de tener tabaco, ya no tengo la necesidad de fumarme un cigarro para "relajarme", o de esperar hasta el descanso del trabajo para fumarme un cigarro.

Sé que esto sólo es el principio y que para que los pulmones estén completamente limpios tienen que pasar diez años, pero no me voy a rendir, no quiero volver a fumar un cigarro. Gracias a dejar de fumar mi salud ha mejorado y ha disminuido el riesgo de volver a sufrir un infarto. Todo esto hace que no quiera volver a fumar, ya no me atrae, incluso cuando veo a otras personas fumar no me llama. Esto me da aún más fuerzas para no volver a fumar. **Mi estilo de vida ha cambiado y el tabaco se ha convertido en algo incompatible con mi día a día.**

Former smoker who tells how and why he quit smoking and the associated benefits (*gain frame*)

**First-person narrative**

**Low tobacco dependence**

**Miguel tiene 35 años y empezó a fumar a los 15**. **A los pocos meses ya no podía empezar el día sin fumarse un par de cigarrillos, incluso antes de desayunar. Estaba muy enganchado y fumaba más de una cajetilla de tabaco al día. Durante casi veinte años fumó a diario, incluso cuando estaba enfermo**, y le daba igual que le dijeran que el tabaco mata. Miguel era muy joven para pensar en eso. Hace un año sufrió un amago de infarto. Esto le hizo entender que ya no era tan joven y que su cuerpo ya no respondía como antes. Se asustó. El médico le dijo que lo primero que tenía que hacer era dejar de fumar para que su cuerpo se recuperara y que con el tiempo sería como si nunca hubiera fumado.

Las primeras semanas fueron muy difíciles para Miguel. Le dolía muchísimo la cabeza, tenía ansiedad y le costaba mucho concentrarse en el trabajo (no podía parar de pensar en encenderse un cigarro, en darle una última calada). Además, como estaba todo el día ansioso e inquieto, le costaba mucho dormir. Creía que no iba a ser capaz, sólo el miedo a sufrir un infarto le hacía tirar para adelante. A los tres meses empezó a ver algunos cambios en su cuerpo: le sacaba sabor a la comida, su olfato también mejoró e incluso notaba que respiraba mejor. Pensó que hacer deporte le vendría bien y así fue... se sentía más relajado, ya no tenía problemas para dormir, su tensión arterial bajó y desapareció por completo la tos que siempre tenía al levantarse. **Además, empezó a ahorrar, más de 150 euros al mes, al dejar de comprar tabaco**.

**Ya hace un año que Miguel dejó de fumar**. Ahora se siente mucho mejor, más libre: ya no es un esclavo del tabaco que hurga en la basura de casa en busca de colillas, ya no se despierta por las noches para fumar y tampoco se levanta pensando en ese primer cigarro.

Miguel sabe que esto sólo es el principio y que para que sus pulmones estén completamente limpios tienen que pasar diez años, pero no se va a rendir, no quiere volver a caer en el vicio. Gracias a dejar de fumar su salud ha mejorado y ha disminuido el riesgo de volver a sufrir un infarto. Todo esto hace que no quiera volver a fumar, ya no le atrae, incluso cuando ve a otras personas fumar no le llama. Esto le da aún más fuerzas para no volver a fumar. **Su estilo de vida ha cambiado y el tabaco se ha convertido en algo incompatible con su día a día**.

Former smoker who tells how and why he quit smoking and the associated benefits (*gain frame*)

**Third-person narrative**

**High tobacco dependence**

# Fagerström Test for nicotine dependence

(Heatherton, Kozlowski, Frecker & Fagerstrom, 1991)

Please answer the following questions:

1. How soon after you wake up do you smoke your first cigarette?
   - 3 - Within 5 minutes
   - 2 - 6-30 minutes
   - 1 - 31-60 minutes
   - 0 - After 60 minutes

2. Do you find it difficult to refrain from smoking in places where it is forbidden (e.g. in church, at the library, cinema, etc.)?
   - 1 - Yes
   - 0 - No

3. Which cigarette would you hate to give up?
   - 1 - The first one in the morning
   - 0 - All the others

4. How many cigarettes/day do you smoke?
   - 0 - 10 or less
   - 1 - 11-20
   - 2 - 21-30
   - 3 - 31 or more

5. Do you smoke more frequently during the first hours after waking than during the rest of the day?
   - 1 - Yes
   - 0 - No

6. Do you smoke if you are so ill you are in bed most of the day?
   - 1 - Yes
   - 0 - No

Participants obtain a score of 0 (low) to 10 (high) on tobacco dependence:

$M = 4.46$ [$SD = 2,27$]

$Md = 5$

# Manipulation check [similarity with the protagonist]

***Matching***

| Audience (participants) | Narrative protagonist | |
|---|---|---|
| | Low tobacco dependence (He smoked little) | High tobacco dependence (He smoked a lot) |
| Low tobacco dependence (Fagerström test: < 5) | High behavioural similarity | Low behavioural similarity |
| High tobacco dependence (Fagerström test: ≥ 5) | Low behavioural similarity | High behavioural similarity |

## Index of perceived similarity (1 = low, 5 = high)

$t(678) = -5.60$, $p = .000$
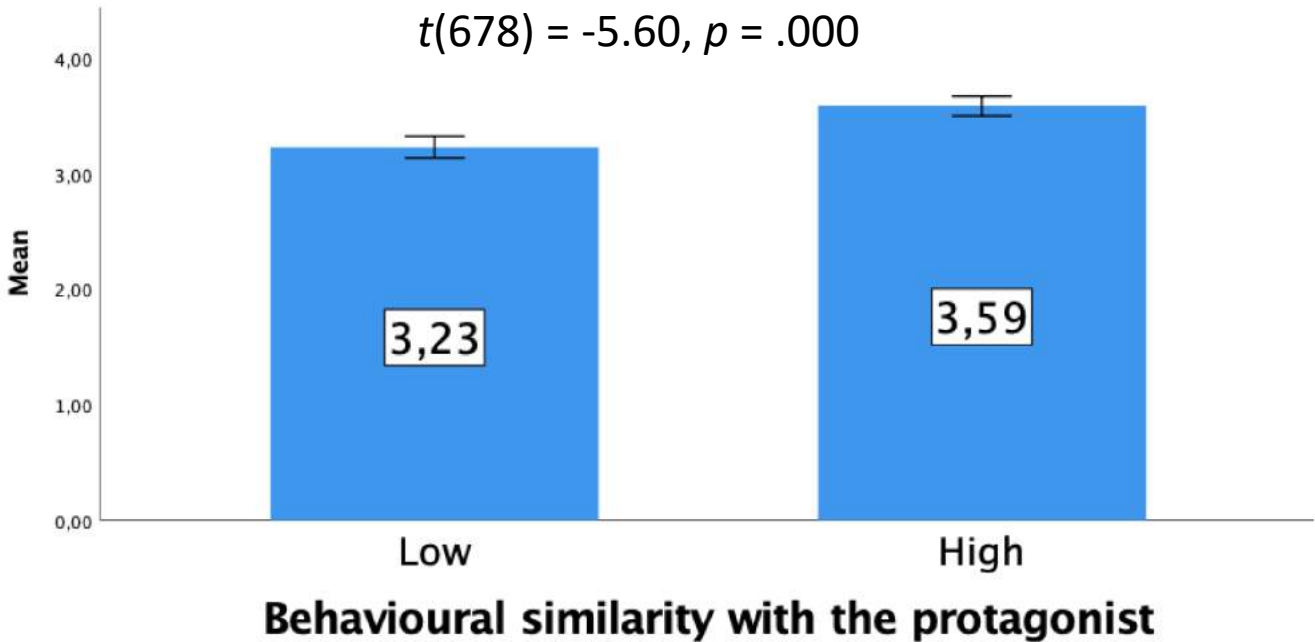


Error bar: 95% CI

**Index of perceived similarity**:

"To what extent do you consider that you have things in common with Miguel?"
"To what extent do you consider Miguel to be similar to you considering Miguel's level of tobacco use, before he stopped smoking?"
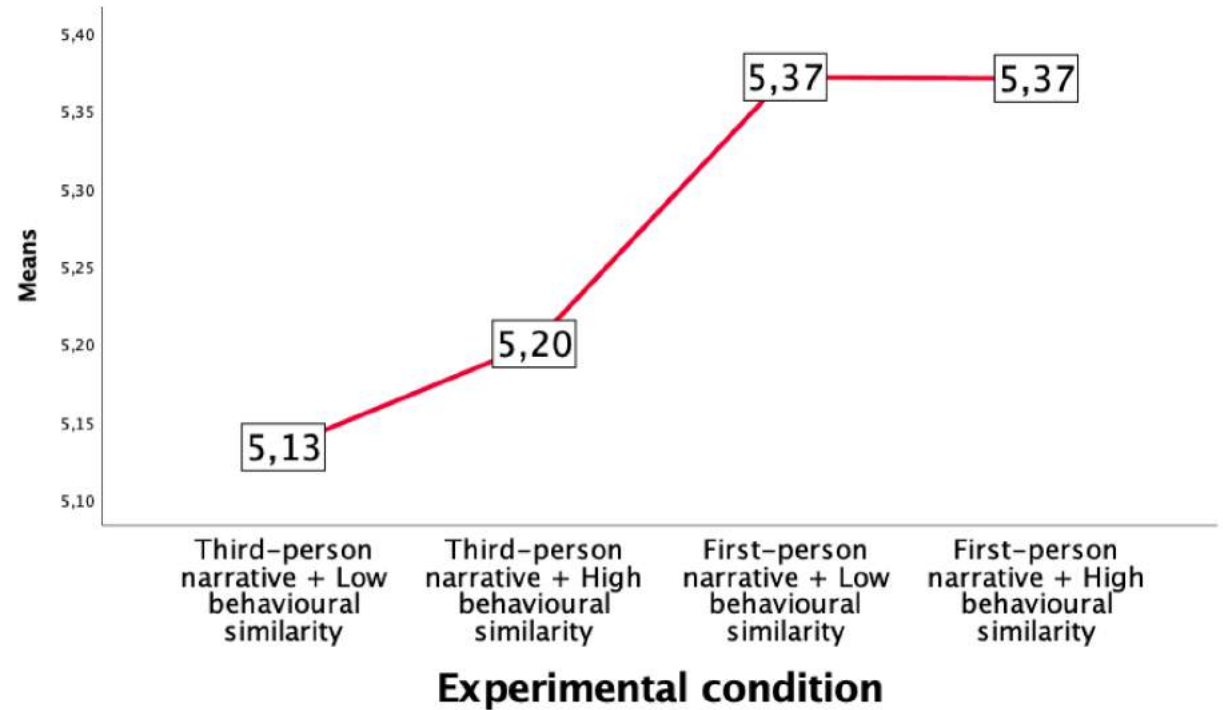($r = .54$, $p < .001$)

# Results H1 (ANOVA, planned contrast analysis)

**Identification (H1a)** ✅

**Transportation (H1b)** 😣
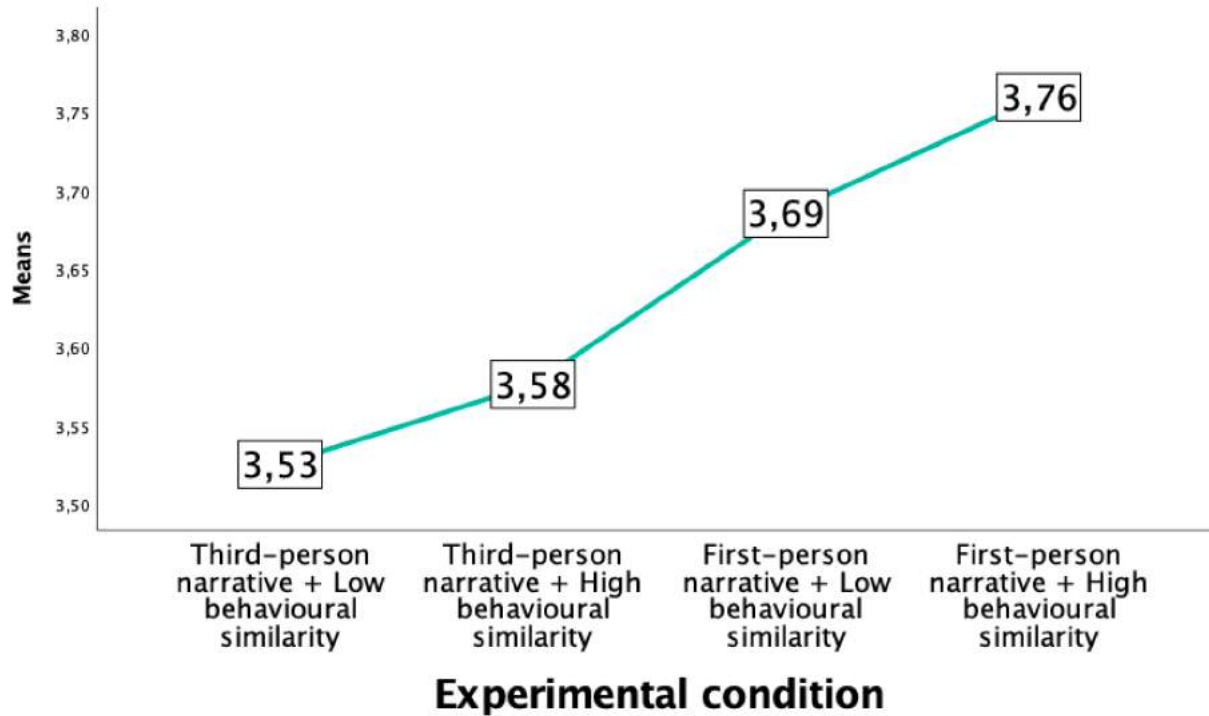


$F_{condition}(3, 617) = 2.79, p = .040, \eta_p^2 = .013$
$t_{contrast\ 1\ (-1,\ 0,\ 0,\ 1)}(617) = 2.59, p = .010, r = .10$
$t_{contrast\ 2\ (-1,\ -1,\ -1,\ 3)}(617) = 2.30, p = .022, r = .09$

$F_{condition}(3, 617) = 1.58, p = .192, \text{observed power} = .41$
$t_{contrast\ 1\ (-1,\ 0,\ 0,\ 1)}(617) = 1.75, p = .080, r = .07$
$t_{contrast\ 2\ (-1,\ -1,\ -1,\ 3)}(617) = 1.27, p = .202, r = .05$

# Results H2 (serial multiple mediator Models)

PROCESS for SPSS (Model 6; 10,000 bootstrapped samples with 95% percentile confidence intervals; Hayes, 2018): to estimate the **indirect effect of first-person and high-similarity narrative condition (X3)** on quit smoking intention, self-efficacy expectations, and perceived effectiveness of the preventive response, as mediated by identification and transportation (primary mediators) and counterarguing and reactance (secondary mediators). X1 (similarity effect) and X 2 (narrative voice) were included in the models as covariates. Similar coding approach has been used by Bolkan, Goodboy & Myers (2017).

| Experimental condition (as a multicategorical independent variable) | Dummy codes | | |
|---|---|---|---|
| | X1 | X2 | X3 |
| 1.- Third-person narrative and low similarity (*reference condition*) | 0 | 0 | 0 |
| 2.- Third-person narrative and high similarity | 1 | 0 | 0 |
| 3.- First-person narrative and low similarity | 0 | 1 | 0 |
| 4.- First-person narrative and high similarity | 0 | 0 | 1 |
| | **Similarity effect** | **Narrative voice effect** | **Optimal reception condition** |

# Identification & Reactance
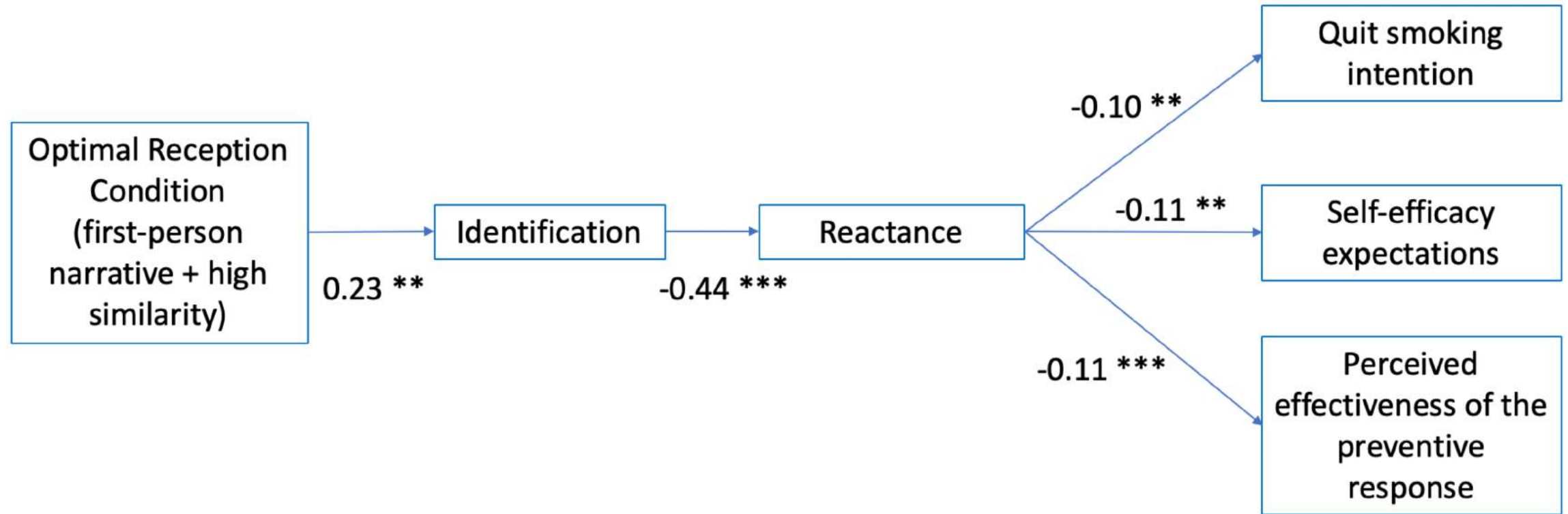


Indirect effects (PROCESS, SPSS)

ORP → Identification → Reactance → Quit smoking: B = .0108, SE = .0065, Boot 95% CI [.0012, .0261]

ORP → Identification → Reactance → Self-efficacy: B = .0121, SE = .0073, Boot 95% CI [.0015, .0297]

ORP → Identification → Reactance → Self-efficacy: B = .0121, SE = .0059, Boot 95% CI [.0027, .0255]

# Identification & Counterarguing
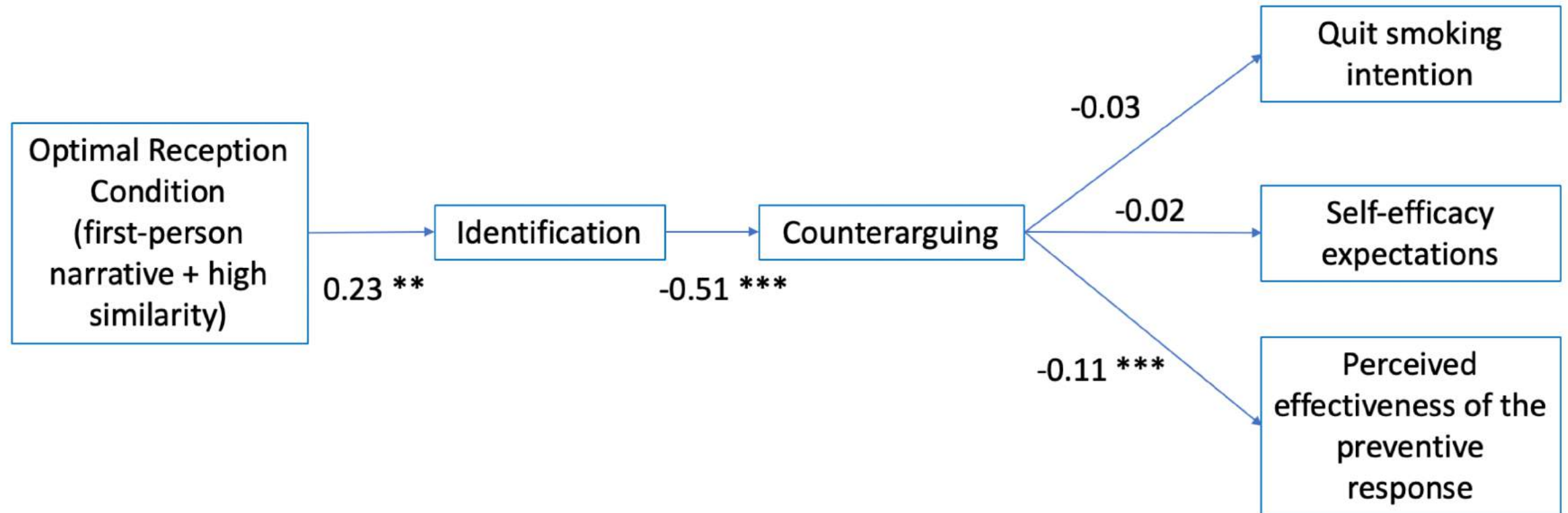


Indirect effects (PROCESS, SPSS)

ORP → Identification → Counterarguing → Quit smoking: B = .0041, SE = .0057, Boot 95% CI [-.0051, .0180]

ORP → Identification → Counterarguing → Self-efficacy: B = .0031, SE = .0062, Boot 95% CI [-.0086, .0167]

ORP → Identification → Counterarguing → Self-efficacy: B = .0138, SE = .0069, Boot 95% CI [.0030, .0299]
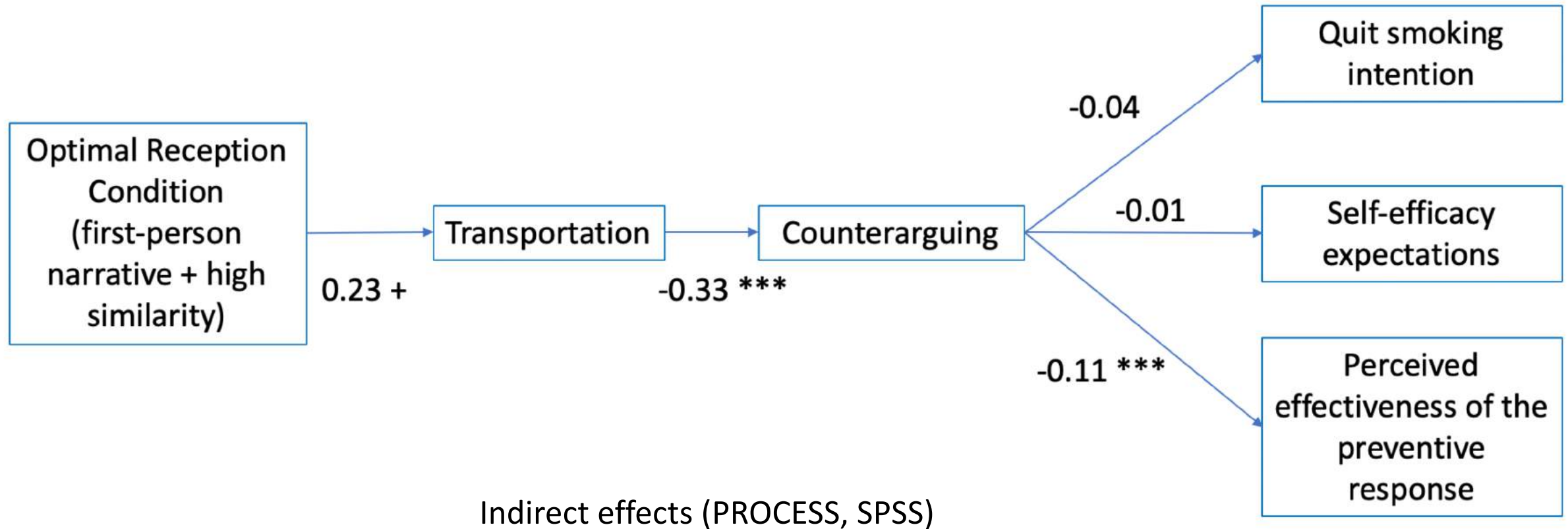
# Transportation & Reactance



Indirect effects (PROCESS, SPSS)
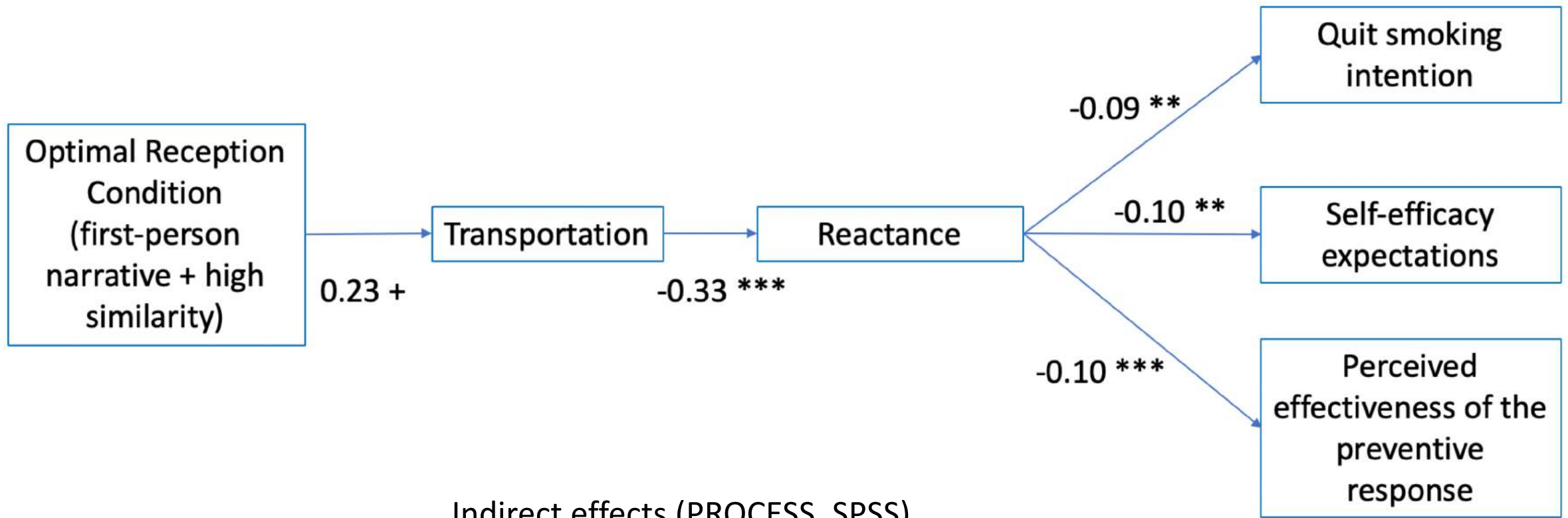
ORP → Transportation → Reactance → Quit smoking: B = .0075, SE = .0059, Boot 95% CI [-.0009, .0217]

ORP → Transportation → Reactance → Self-efficacy: B = .0083, SE = .0067, Boot 95% CI [-.0010, .0246]

ORP → Transportation → Reactance → Self-efficacy: B = .0083, SE = .0056, Boot 95% CI [.0005, .0187]

# Transportation & Counterarguing



Indirect effects (PROCESS, SPSS)

ORP → Transportation → Counterarguing → Quit smoking: B = .0037, SE = .0046, Boot 95% CI [-.0026, .0154]

ORP → Transportation → Counterarguing → Self-efficacy: B = .0009, SE = .0043, Boot 95% CI [-.0076, .0108]

ORP → Transportation → Counterarguing → Self-efficacy: B = .0080, SE = .0060, Boot 95% CI [-.0009, .0226]

# Conclusions & discussion

- New evidence on how to improve smoking prevention interventions aimed at adults.
- Certain **variables** related to the **construction of prevention messages** (the "joint effect" of the narrative voice and the behavioural similarity) have a significant (indirect) effect on preventive measures, due to the fact that these variables **initiate a process of empathic involvement with the protagonist** that **reduce**, in turn, the **resistance towards the persuasive message**.
- Two theoretical innovative concepts in narrative persuasion: **behavioural similarity** and **optimal reception condition**.
- **Mobile Apps** for smoking prevention in which the user is allowed to configure the avatar based on behavioural similarity.
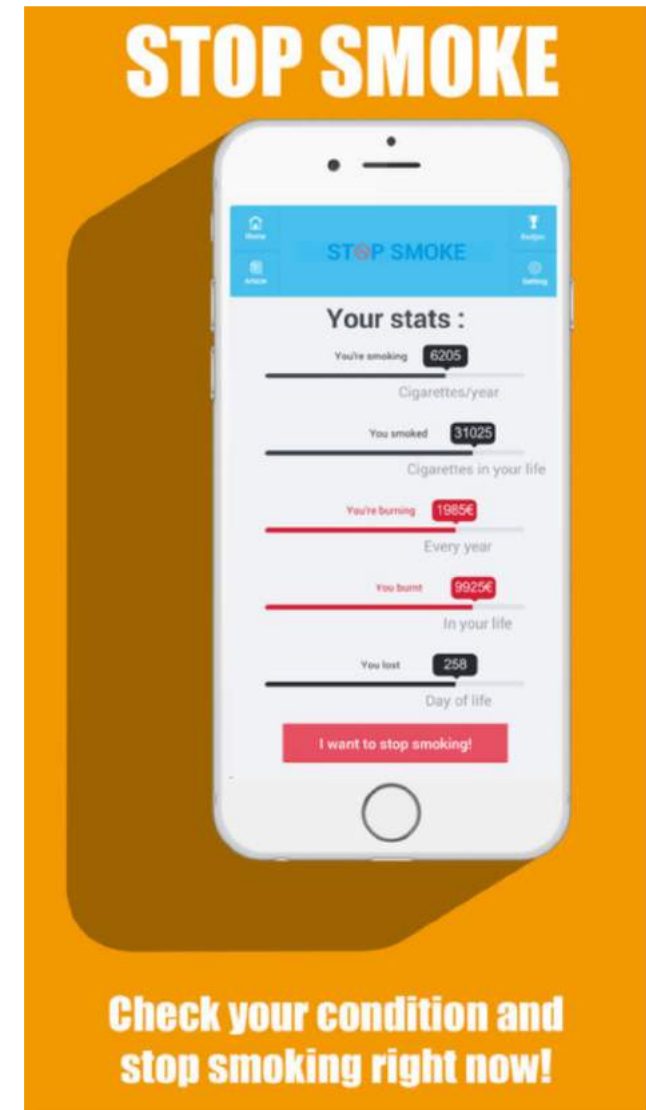
# Thank you for your attention!

This presentation

Juan-José Igartua (*)
University of Salamanca, Spain
(*) Contact: **jigartua@usal.es**