UNIVERSITY OF TWENTE.

TWITTER CANCER AWARENESS CAMPAIGNS AS #IDENTITYPROJECTS FOR PREVENTION AND EARLY DETECTION BEHAVIOR

Lunch Lecture Inter-Actief – April, 4th 2017

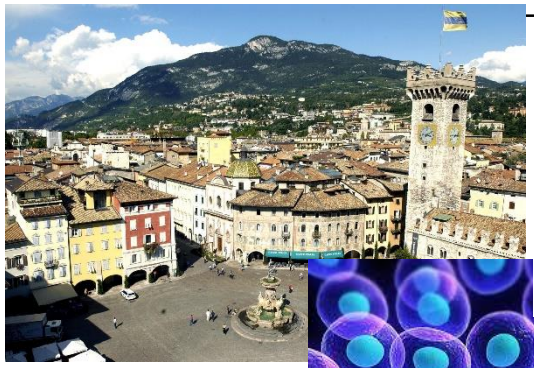
@AnnaPriante – a.priante@utwente.nl

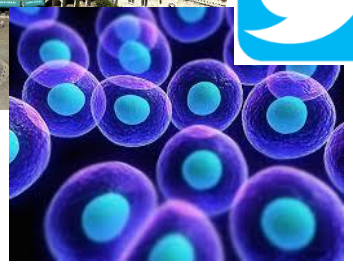
Agenda

- Something about me
- PhD project
- Social Identity Classifier and applications
- Q&A

#WhoIAm in 160 characters and some more

UNIVERSITY OF TRENTO - Italy

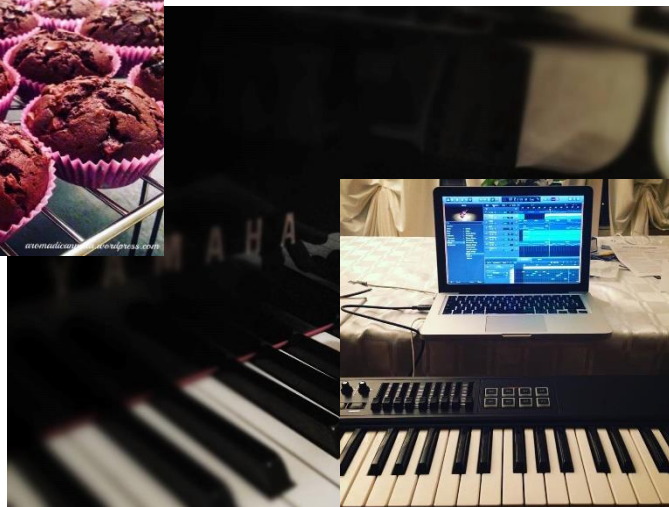




Anna Priante

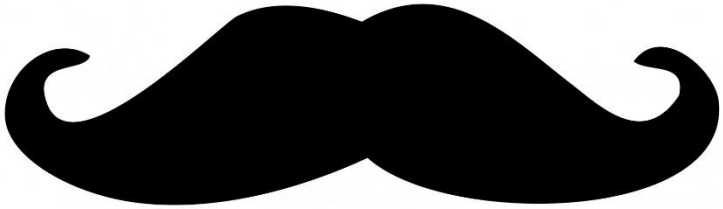
@AnnaPriante

PhD researcher on online social movements @UTwente | Topic: Twitter cancer awareness campaigns, online identities and offline behaviors | Musician | Foodblogger



TWITTER CANCER AWARENESS CAMPAIGNS AS #IDENTITYPROJECTS

A multi-level study of the influence of online identities on offline behaviors



MOVEMBER

ALL OF US

CANCER

GROW A MO
SAVE A BRO
JOIN ME. MOVEMBER.COM

GROW + GIVE + MOVE
MOVEMBER.COM

MOVEMBER
MOUSTACHE STYLE GUIDE

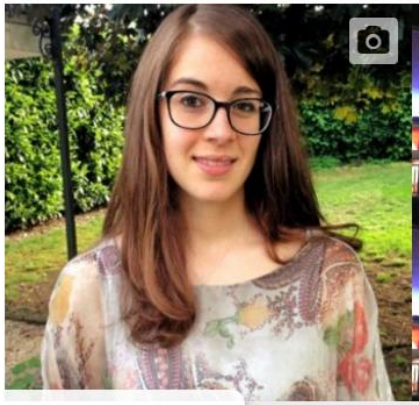
THE WISP
THE ABRAKADABRA
THE ROCK STAR
THE UNDERCOVER BROTHER
THE TRUCKER
THE REGENT
THE BUSINESS MAN
THE BOX CAR
THE CONNOISSEUR
THE AFTER EIGHT

MOVEMBER.COM

Anna Priante

OPZET FONDSENWERVING 63%

Ga naar openbare pagina



Mijn motivatie

To raise awareness about the importance of healthy behaviors and early detection to prevent cancer

- Anna Priante

1
EERSTE JAAR MO SISTA!

MIJN MOSPACE-PAGINA | TEAM | NETWERK | FONDSENWERVING: DE TIPS | TE DOWNLOADEN | MEER

MOVE-update

8 WEKEN GELEDEN

Ik heb gefietst 10 kilometer

DELEN VIA FACEBOOK VERWIJDEREN AANPASSEN VERSTOPPEN

MOVE-update

8 WEKEN GELEDEN

Ik ben actief geweest gedurende 1 uur

DELEN VIA FACEBOOK VERWIJDEREN AANPASSEN VERSTOPPEN

MOVE-update

8 WEKEN GELEDEN

Ik ben

URL voor fondsenwerving

Teamcaptain

TIJS VAN DEN BROEK

Post een teamupdate.

OPMERKING | MOVE-UPDATE

Anna Priante
@AnnaPriante

#MOVE DAY 2 Every day I go to work by bike. Just 10 km per day but it is good to move #movember #modatagranttwente

Visualizza traduzione

RETWEET
1

Anna Priante ha Ritwittato

Movember USA @Movember · 2 nov 2015
Every Mo matters! It's not too late to sign up to Grow or MOVE this #Movember bit.ly/SignUpMovember…

90 32 •••

Anna Priante feeling motivated.
18 November 2015 ·

#SupportTheCause: I'm helping #Movember change the face of men's health with my donation. Join me in supporting this important cause! http://mosista.co/annapriante

Like Comment Share

[redacted] and 3 others like this.

Anna Priante ha Ritwittato

Movember USA @Movember · 31 ott 2015
Tomorrow is #Movember 1st! Time to #Shavethedate. Are you ready? bit.ly/SignUpMovember…

50 29 •••

Anna Priante
29 November 2015 ·

Ultimo giorno, last run of the day!
Join me and support the cause!

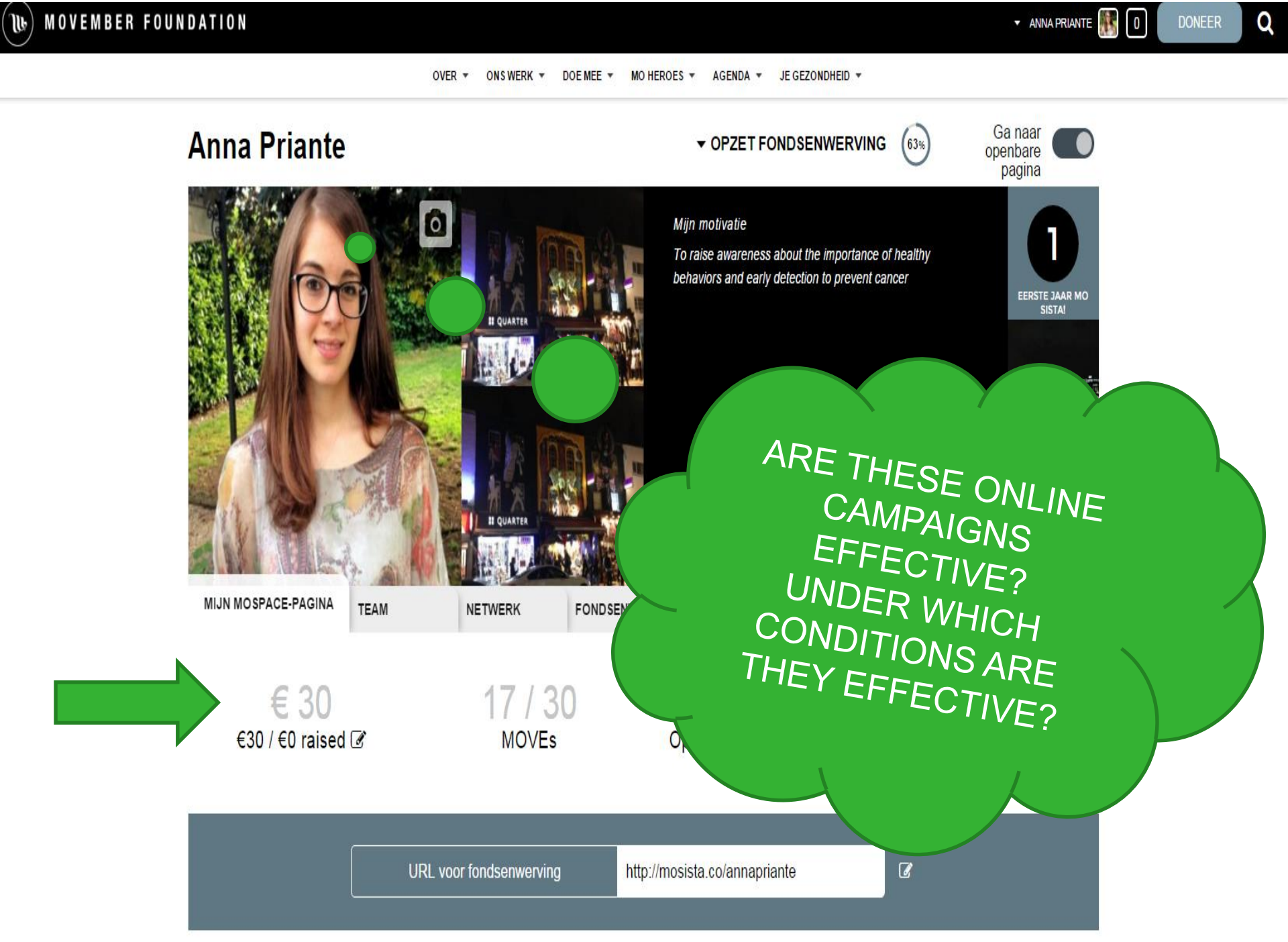
Anna Priante feeling motivated.
18 November 2015 ·

#SupportTheCause: I'm helping #Movember change the face of men's health with my donation. Join me in supporting this important cause! http://mosista.co/annapriante

Like Comment Share

[redacted] and [redacted] like this.

Write a comment...

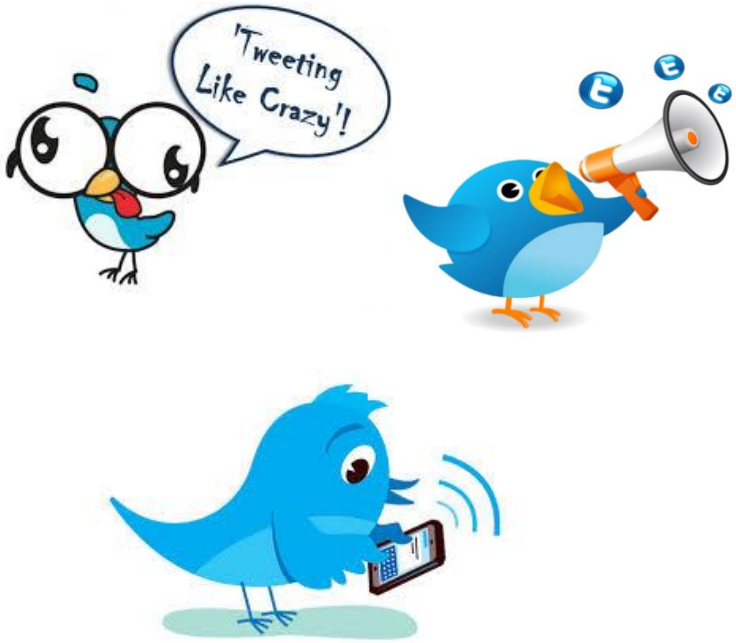

MOVEMBER FOUNDATION
ANNA PRIANTE
0
DONEER
OVER
ONS WERK
DOE MEE
MO HEROES
AGENDA
JE GEZONDHEID
Anna Priante
OPZET FONDSENWERVING
63%
Ga naar openbare pagina
Mijn motivatie
To raise awareness about the importance of healthy behaviors and early detection to prevent cancer
1
EERSTE JAAR MO SISTA!
II QUARTER
II QUARTER
MIJN MOSPACE-PAGINA
TEAM
NETWERK
FONDSEN
€ 30
€30 / €0 raised
17 / 30
MOVEs
URL voor fondsenwerving
http://mosista.co/annapriante
ARE THESE ONLINE CAMPAIGNS EFFECTIVE?
UNDER WHICH CONDITIONS ARE THEY EFFECTIVE?

TWITTER CANCER AWARENESS CAMPAIGNS AS #IDENTITYPROJECTS

A multi-level study of the influence of online identities on offline behaviors

Effectiveness of online campaigns

Online (low-threshold) behavior



Meaningful offline behavior

How can we study campaigns effectiveness?

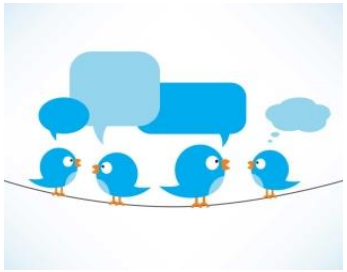
ONLINE IDENTITY

Conceptualize, explore and test how online identities explain the effectiveness of online campaigns

EFFECTIVENESS OF ONLINE CAMPAIGNS

online

offline



Identities on Twitter

Profile & Descriptions

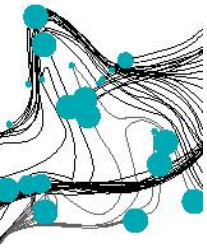
Hashtags

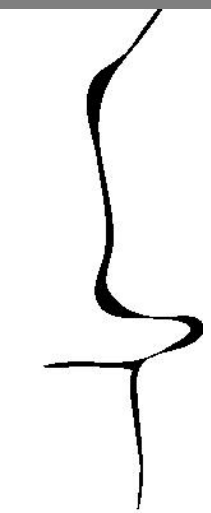
#movember #modatagranttwente
#moustache #menshealth

Tweets & retweets

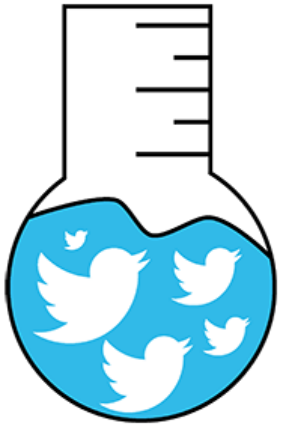
SOCIAL SCIENCES MEET BIG DATA

‘Big social data’: all tweets from 9 campaigns and 6 cancer types since 2008





> 300 million Tweets



#WhoAmI IN 160 CHARACTERS? CLASSIFYING SOCIAL IDENTITIES BASED ON TWITTER PROFILE DESCRIPTIONS

A. Priante, D. Hiemstra, T. van den Broek, A. Saeed, M. Ehrenhard, A. Need

▪*Proceedings of the first EMNLP Workshop on Natural Language Processing and Computational Social Science, Association for Computational Linguistics, ISBN 978-1-945626-26-5, pages 55-65, 2016*

Main contributions:

1. Social theory can be used to guide NLP methods, and NLP methods provide input to revisit social theory
2. Three social identity classifiers of Twitter profile descriptions (English) for scaling-up online identity research to massive datasets

From language to identity and behavior

LANGUAGE

SOCIAL IDENTITY

BEHAVIORS

Social Theory

- **SOCIAL IDENTITY: individual's self-concept derived from social roles or memberships to social groups**

5-Category Online Social Identity Classification

Data & Methods

English Tweets

- Movember campaign
- Random tweets
- From UK, US & AUS (country classifier)

Profile description

N = 2,633

Qualitative Content Analysis

- Human Annotation (2 coders)
- Codebook
- Inter-rater reliability (KALPHA) > 0.850

Automatic Text Classification

- Binary text classification
- TF-IDF weighting & ChiSquare for FS
- 4 classification algorithms (SVM, BNB, LR, RF)
- Stratified 10-Fold Cross Validation
- Evaluation measures: precision (P), recall (R) and F-score.

Experiment 1: PARTIALLY WORKS!

- 5-category online social identity classification
- Stratified 10F Cross Validation on 3 training sets
- Optimal classification algorithm: **Logistic Regression** (evaluation on 3 test sets)

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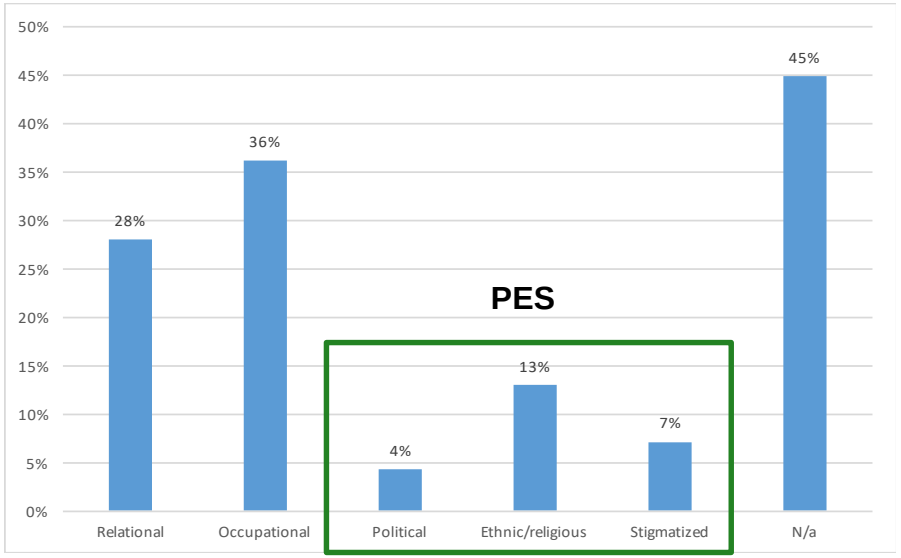
RELATIONAL			OCCUPATIONAL		
P	R	F	P	R	F
0.757	0.648	0.699	0.743	0.791	0.766

POLITICAL			ETHNIC/RELIGIOUS			STIGMATIZED		
P	R	F	P	R	F	P	R	F
0.600	0.200	0.300	0.661	0.460	0.543	0.958	0.273	0.425

REVISITING SOCIAL THEORY

- Political, Ethnic/Religious and Stigmatized identities are more engaged in collective action
- They have a collective, action-oriented nature and may often overlap
- We merge Political, Ethnic/Religious and Stigmatized identities (PES identity)

Distributions of social identities on Twitter (based on the annotated sample).



Experiment 2: WORKS!

- 3-identity category merger (PES identity)
- Stratified 10F Cross Validation on Combined(1) training set
- Optimal classification algorithm: **Logistic Regression** (evaluation on Combined(2) test set)

PES		
P	**R**	**F**
0.857	0.466	0.604

We succeeded in developing 3 social identity classifiers for **relational, occupational and PES identities**!

Social theory can be used to guide NLP methods, and NLP methods provide input to revisit social theory

WHAT'S NEXT?

THE ROLE OF OCCUPATIONAL IDENTITY AND COMMUNICATION NETWORKS IN CHARITABLE GIVING DURING ONLINE CAMPAIGNS

Occupational Identity (Classifier)

Charitable Giving

~~*Frequency of Tweets*~~

Structural position in the network

Practical contributions for Movember

- Campaign organizers should consider to target people with occupational identities because they are likely to engage in charitable giving
- Limit behavioral choices to those relevant to charitable giving by lightening the intensity of Twitter activity in favor of the creation of communicative networks, social identification, interconnectedness and interdependence

THANK YOU FOR YOUR ATTENTION!

QUESTIONS?

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@AnnaPriante