Obvious & Hidden Threats in the Facebook Social Network

A Practical Methodological Framework of the Study

Zlatogor Minchev[1] & Plamen Gatev[2]

[1]Institute of ICT/Institute of Mathematics & Informatics

[2]Institute of Neurobiology

BULGARIAN ACADEMY OF SCIENCES

June 29, 2012   Int. Conf. on Informational Modelling   Varna, Bulgaria

Outline

❑ **Studied Environment**

❑ **Methodological Context**

❑ **Experimental Set-ups**

❑ **Results**

❑ **Discussion**

❑ **What's next?**

Studied Environment

Social Networks

- Over 901 M monthly active users;

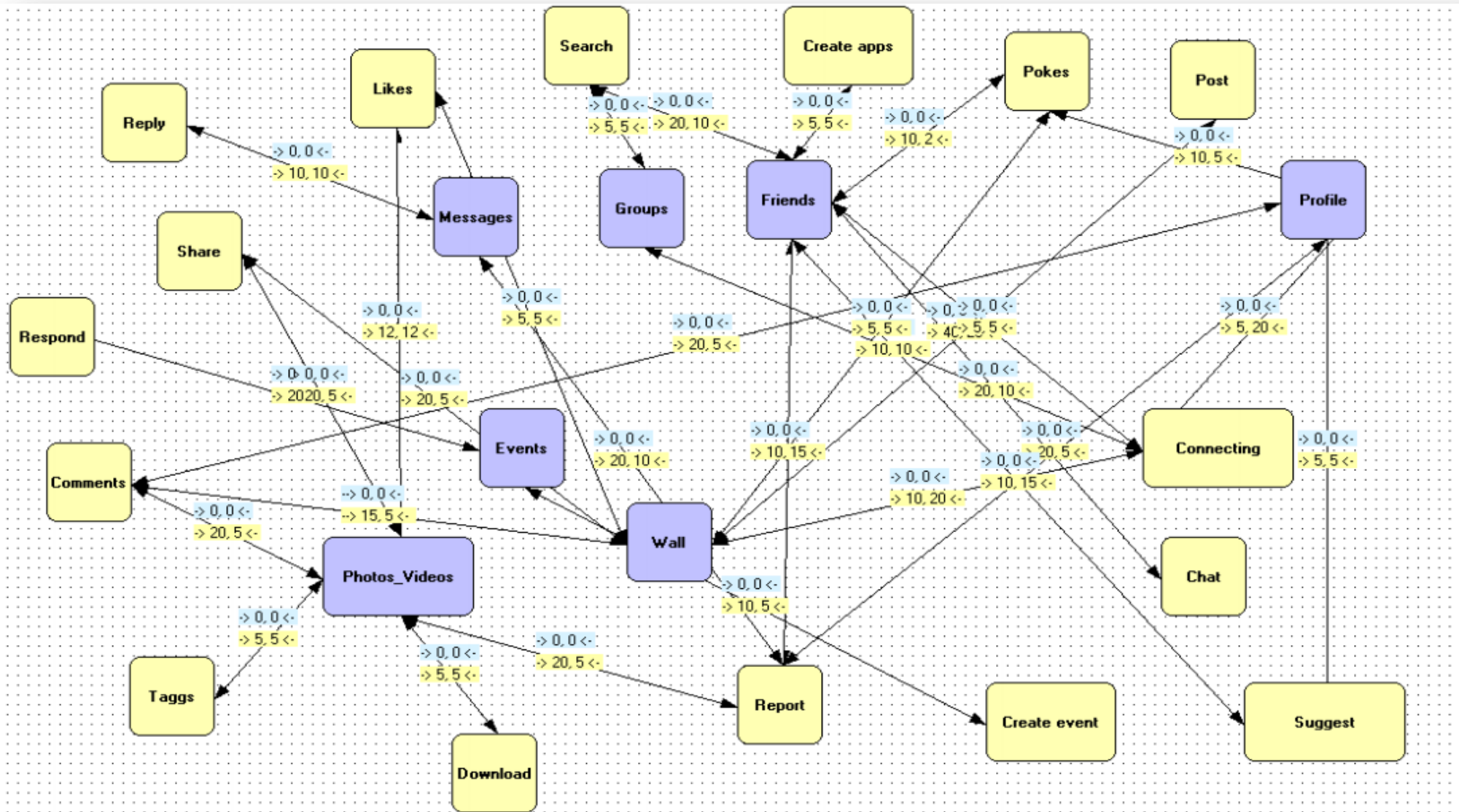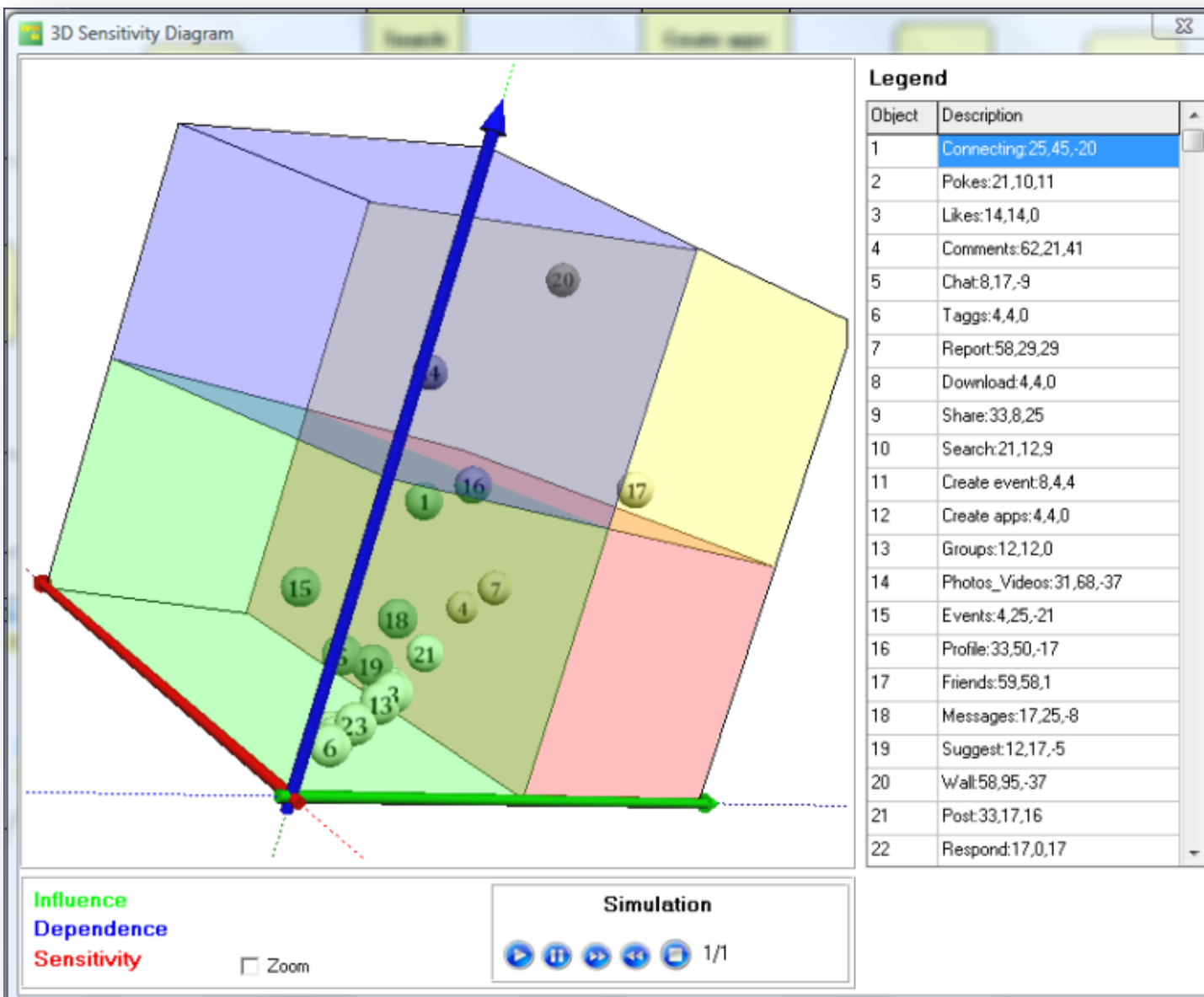- More than 20 % below 18 years;

- Available in more than 70 languages.

http://newsroom.fb.com/Key-Facts/Statistics-8b.aspx

http://en.wikipedia.org/wiki/Facebook

Methodological Context

I-SCIP®

Minchev & Petkova, 2010

Resulting Classification from the Model

3D Sensitivity Diagram

Legend

Object	Description
1	Connecting:25,45,-20
2	Pokes:21,10,11
3	Likes:14,14,0
4	Comments:62,21,41
5	Chat:8,17,-9
6	Taggs:4,4,0
7	Report:58,29,29
8	Download:4,4,0
9	Share:33,8,25
10	Search:21,12,9
11	Create event:8,4,4
12	Create apps:4,4,0
13	Groups:12,12,0
14	Photos_Videos:31,68,-37
15	Events:4,25,-21
16	Profile:33,50,-17
17	Friends:59,58,1
18	Messages:17,25,-8
19	Suggest:12,17,-5
20	Wall:58,95,-37
21	Post:33,17,16
22	Respond:17,0,17

Influence
Dependence
Sensitivity

☐ Zoom

Simulation
1/1

Objects Classification:

- **Critical: Friends – '17'**

- **Passive: Photos_Videos, Profile, Wall – '14', '16', '20'**
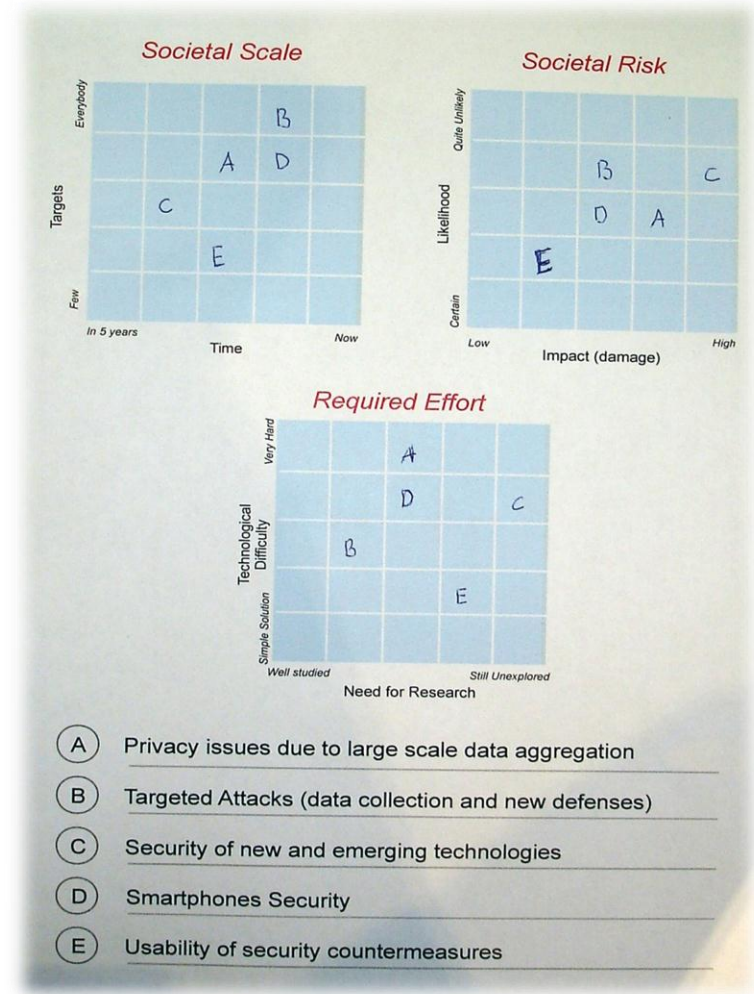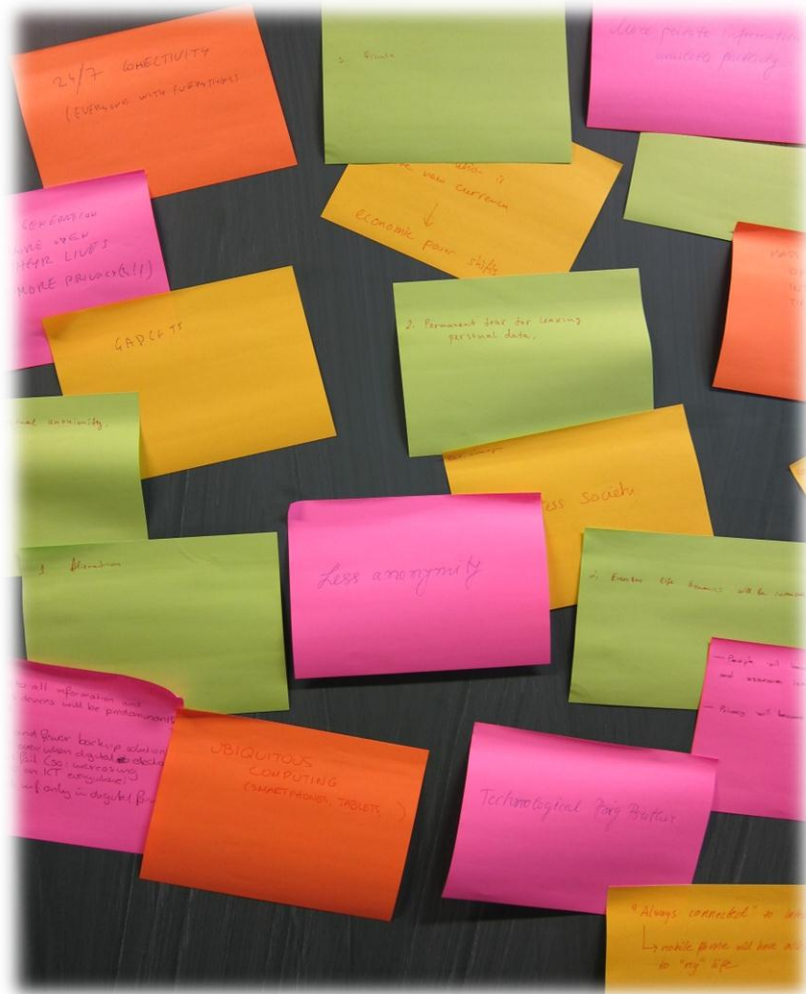
- **The rest are buffering ☺**

But how certain we are?

- Since 2012 the new 'Timeline' view is combining 'Wall' and 'Profile' elements but is still optional;

- 'Timeline' view is presenting the information in a more visible way;

- The 'Subscribe' option has recently appeared (Sept, 2011);

- All these results are subjective due to the experts' knowledge usage;

- We do not have complete data about all Facebook changes…
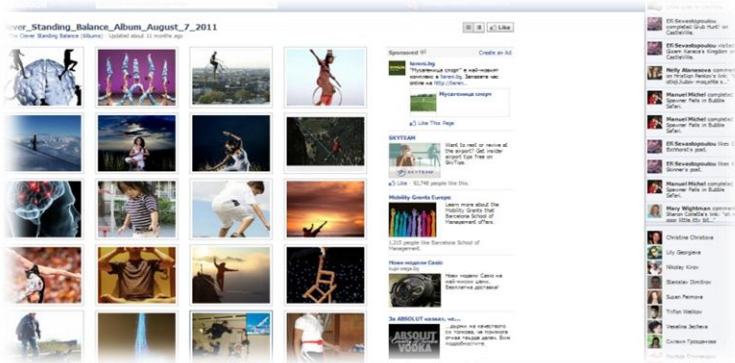
Some Examples of Facebook Hidden Threats

SOCIAL ENGINEERING
The clever manipulation of the natural human tendency to trust.

Some New Cyber Threats Surveys

- (A) Privacy issues due to large scale data aggregation
- (B) Targeted Attacks (data collection and new defenses)
- (C) Security of new and emerging technologies
- (D) Smartphones Security
- (E) Usability of security countermeasures

syssec

Participants

Experimental Set-Ups

Psychological monitoring

Physiological monitoring

Some Initial Results

Psychological Monitoring Battery Key Elements

Eysenck Personality Scale

Von Zerssen Depression Scale

Zuckerman Sensations Seeking Scale

Some Physiological Results

Significant Results Illustration (HRV & L-R brain asymmetry)
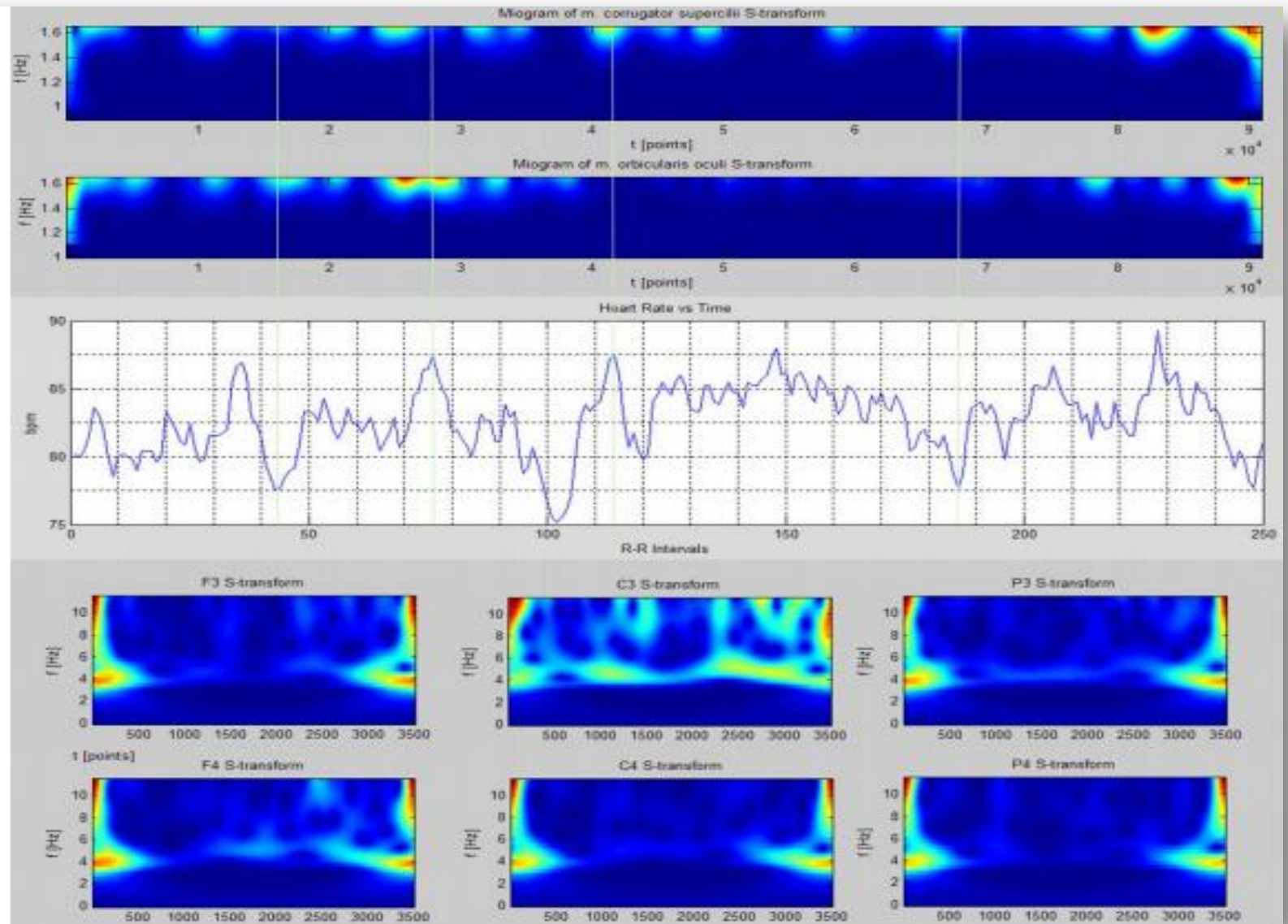
Discussion
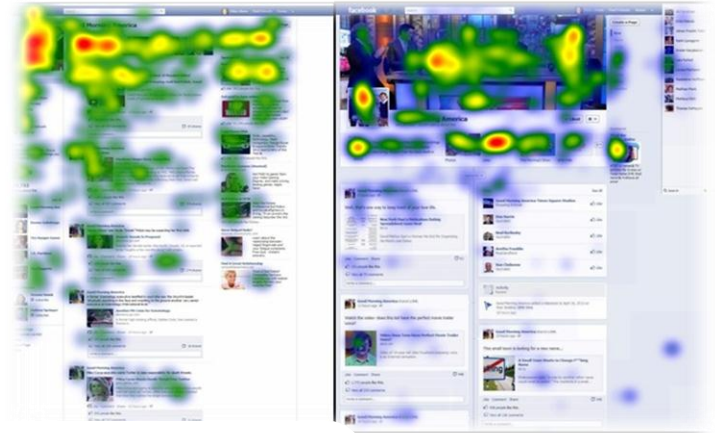
The obtained initial results have shown an incomplete psychophysiological conclusions concerning emotions and behaviour dynamics of Facebook users.

Useful conclusions regarding our initial findings could be generalized around the following:

1) Extraverts are the typical Facebook users which are also intended to look for sensations due to hidden predisposition to depression states;

2) EEG is difficult for analysis and currently useful only by means of a quantitative measure of left/right hemisphere activation in selectable limited spectrum areas;

3) ECG R-R intervals are a useful parameter that could be concerned correlating with EMG data;

4) Cyberthreats are context (interface & platform) dependable;

5) The social engineering regarding Web 2/Web 3 obvious/hidden threats identification requires both cyber- and human factor-oriented approaches for correct studying.

What's next?

Acknowledgements