



## The Influence of Digidal Drugs on Young Perception

Mihai Aniței, Mihaela Chraif

[mihai.anitei@unibuc.ro](mailto:mihai.anitei@unibuc.ro), [mihaelapopa14@yahoo.com](mailto:mihaelapopa14@yahoo.com)

University of Bucharest (Romania)

### Abstract

*Mental representations of sounds cannot be observed directly, but one way to study scientifically these representations scientifically is through a variety of tests that analyse how people react after such sensory experiences.*

*The research is focused on highlighting the effects of digital drugs on perception of the visual stimuli and on the physiological reactivity. Drugging with sounds, I-dosing or digital drugs are very new concepts in the field of the Internet. These are a series of audio files which, if listened to with one's headphones on their ears, induce hallucinogenic effects, modify emotional states, the biological states and the ability to concentrate or attention. These files contain stereo sounds and infrasound, which, according to experimental studies, synchronize with brain waves, having the effect of simulated experiences or emotional tones. After listening to such files, the subject might show effects similar to consumption of marijuana, cocaine or opium.*

*The method: The participants in this study were 63 undergraduate students from the Faculty of Psychology and Education Sciences, aged between 18 and 22 years ( $m=19.83$ ;  $S.D.=1.17$ ). The instruments and materials: The polygraph Lafayette, LX series 4000 platinum, cognitive task perception test (GESTA) and i-dosing music.*

*The results show that there is a significant influence between the control group and the experimental group. Therefore, the group listening to i-dosing music obtained a statistically significant lower performance for the cognitive task perception test and a statistically significant higher physiological reactivity than the control group measured by the polygraph.*

*The conclusions highlight that those who listen to i-dosing type files should be warned about the effects of such files on their mental and biological health.*

### 1. Theoretical Framework

Mental representations of sounds cannot be observed directly, but one way to study scientifically these representations scientifically is through a variety of tests that analyse how people react after such sensory experiences.

Drugging with sounds, I-dosing or digital drugs are very new concepts in the field of the Internet [1]. These are a series of audio files which, if listened to with one's headphones on their ears, induce hallucinogenic effects, modify emotional states, biological states and the ability to concentrate or attention. These files contain stereo sounds and infrasound, which, according to experimental studies, synchronize with brain waves, having the effect of simulated experiences or emotional tones. After listening to such file files, the subject might show effects similar to consumption of marijuana, cocaine or opium.

[2] evidenced that an individual has the ability to control problem solving, comprehension is automatic. Moreover, there are a variety of outside factors, internal and external, that affect reading comprehension and cognitive task applications. According to [3] and [4] human emotion is one such factor that is capable of directly affecting comprehension. Furthermore, [5] evidenced that auditory distractions can affect comprehension even if the sounds are ignored to the cognitive task. [6] cited by



[7] highlighted that several studies show the decline in reading comprehension when auditory distractions are present. Further research studied the interaction of music and personality types [8], the influence of music in stroop test [9], the influence of words and violent movies as stimuli in polygraph psychological reactions in young [10], The physiological reactivity of the young in short-term audio-visual exposure to TV news involving aggression and blood [11]

## 2. The Objectives and Hypothesis

### 2.1. The objectives

The research objectives are the followings: 1) to show that I-dosing audio stimuli influence the reasoning GESTA tasks; 2) to highlight that I-dosing audio stimuli have a statistically significant influence on the physiological reactivity recorded by the polygraph sensors.

### 2.2. The Hypotheses

#### 2.2.1. General hypotheses

1) The I-dosing audio stimuli have a statistically significant influence on the reasoning performances at the GESTA tasks.

2) The I-dosing audio stimuli have a statistically significant influence on the physiological reactivity recorded by the polygraph sensors.

Specifically Hypotheses

2.1 The I-dosing audio stimuli have a statistically significant influence on the GSR amplitude recorded by the polygraph sensors.

2.2 The I-dosing audio stimuli have a statistically significant influence on the GSR time until return recorded by the polygraph sensors.

2.3 The I-dosing audio stimuli have a statistically significant influence on the heart rate recorded by the polygraph sensors.

2.4 The I-dosing audio stimuli have a statistically significant influence on the blood volume pulse recorded by the polygraph.

2.5 The I-dosing audio stimuli have a statistically significant influence on the respiration parameters recorded by the polygraph.

## 3. The method

### 3.1 Participants

The participants in this study were 63 undergraduate students from the Faculty of Psychology and Educational Sciences, aged between 18 and 22 years ( $m=19.83$ ;  $S.D.=1.17$ ).

### 3.2 Instruments and materials

1) The Lafayette Polygraph, LX 4000-Platinum Series, with virtual interface, windows program. The polygraph software and the GSR sensors are generally fixed about two inches apart, either to the top and bottom of the middle finger or on the base of two adjacent fingers.

2) The Cognitive task perception test (GESTA) [12]- The GESTA was developed on the basis of the hierarchical model perception. The aim is to assess the ability of disassembling and assembling structures. The task is to identify a pre-defined shape (in form of a house) in a pattern, and to mark the corners of the house with the mouse as if redrawing them. The test comprises 30 items that vary as regards according to the surrounding pattern. The relevant shape (the house) is presented for each item at the side to serve as a model. The respondent has 20 seconds per item to find the solution.

3) I-dosing music.

### 3.3. The procedure

A polygraph examination took place in the laboratory of Experimental Psychology at the Faculty of Psychology and Educational Sciences. The length of an examination was between 20 and 25 minutes depending on the adaptation of the participants with the environment and the polygraph sensors. Also the examination included the GESTA test tasks.

### 3.4. The experimental design

The independent variable was the I-dosing stimuli.



The dependent variables were the followings: 1) recorded by polygraph: the Galvanic Skin Response (GSR) recorded as amplitude and return distance in pixels; the Heart Rate and the Blood Volume Pulse (BVP) and the respiration rate (amplitude and return distance); 2) the correct and incorrect answers at the GESTA test.

#### 4. Results

Applying the SPSS program to the collected dates, in table 1 can be seen the descriptive statistics for the DEST and Peripheral perception tests.

Table 1. the descriptive statistics

<i>Variables</i>	<i>Group exposed to I-dosing</i>		<i>Control group</i>	
	<i>Mean</i>	<i>Std deviation</i>	<i>Mean</i>	<i>Std deviation</i>
GESTA				
number of correct answers	18.7	3.46	25.72	3.22
number of errors	11.3	2.87	4.28	2.15

The hypothesis has been confirmed ( $p < 0.05$ ) by applying the nonparametric Mann Whitney test for independent groups ( $p < 0.05$ ). Consequently, the I-dosing stimuli have a disturbing influence on the completion of the GESTA tasks.

Table 2. Reactivity measured during the exposure of I-dosing sounds versus silence

<i>Variabile</i>	<i>The group exposed to I-dosing</i>		<i>The control group</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
GSR Amplitude	19.18 div	5.16	1.17 div	0.12
GSR return distance in pixels	39.21 sec	7.23	1.1 sec	0.11
Heart rate (max)	98.75 bpm	12.11	75.39 bpm	4.17
Blood volume pulse	34.2 mmHG	0.31	34.4 mmHG	0.15
Respiration Amplitude P1	3.65 div	0.32	3.52 div	0.25
Respiration return P1	2.87 sec	0.25	2.91sec	0.18

Therefore, after testing the specific hypotheses 1.1, 1.2, 1.3, 1.4 and 1.5 with the nonparametric Mann Whitney test for independent groups, the hypotheses "The I-dosing audio stimuli have a statistically significant influence on the GSR amplitude recorded by the polygraph sensors" and "The I-dosing audio stimuli have a statistically significant influence on the GSR time until return recorded by the polygraph" have been confirmed for  $p < 0.05$ .

Considering the fact that the specific hypotheses concerning the modifications of the GSR amplitude and of the return time it can be highlighted that the that I-dosing audio stimuli have a statistically significant influence at an unconscious level on the emotional state of the participants. Hence, the autonomic nervous system makes the sweat glands within the skin react and consequently, the GSR reaction to the i-dosing stimuli can be identified using the aggressive stimuli the participants are exposed.

#### 5. Conclusions

The research is focused on highlighting the effects of digital drugs on the visual stimuli perception and physiological reactivity.



The results show that there is a significant influence between the control group and the experimental group according to the independent variable I-dosing audio sounds. Therefore, the group listening to I-dosing music obtained a statistically significant lower performance at the cognitive and reasoning tasks and a statistically significant higher physiological reactivity at GSR than the control group measured by the polygraph ( $p < 0.05$ ).

According to the previous research [1], [5], [10], [11] and the present research the conclusions show that those who listen to i-dosing type files should be warned about the effects of such audio files on their mental and physical health.

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