ВАРИАЦИИ В ТЕОРЕТИЧНАТА СТРУКТУРА НА ТОМКИНС ЗА АФЕКТИТЕ И СЦЕНАРИИТЕ

**Красен ФЕРДИНАНДОВ[1],
Иван БАРДОВ[2], Жорж БАЛЕВ[3]**

[1] *СМГ „Паисий Хилендарски“*
[2, 3] *Софийски университет „Св. Климент Охридски“*

[1] БЪЛГАРИЯ, София, улица „Искър“ 61
[2, 3] БЪЛГАРИЯ, София, бул. „Цар Освободител“ 15, град София, България,

✉ krasenferdinandov@gmail.com[1];
✉ ivanbardov@gmail.com[2]; ✉ jorjb@abv.bg[3]

Резюме. Статията описва в подробности алтернатива на метода „научна редукция“ чрез измерване на данни събрани с експериментален модел за тестиране на емоционалността. Представени са резултати от анализи, които се базират на два типа кодиране – номинален и интервален. „Плътност на афекта“ и „предимство“ на „сценарии“ и други работни понятия са заети от теорията на Силван Томкинс. Показателите от приложен проучвателен факторен и Раш анализи за изпитание на трудността на айтемния отговор са съпоставени спрямо два типа кодиране на честотния избор и изчислено „предимство“. Резултатите показват значителни различия в обяснителния потенциал на заложени три, шест, осем и десет латентни условия и степента на „себеприпознаване“ на емоционално натоварени конструкти. Приложени са корелационен и пътеков анализ за проверка на хипотези и са представени корелационни плеяди, които отразяват важни аспекти от трайността на „сценариите“. Три качествени признака за извличане на повтарящи се образци внасят яснота в особеностите на някои връзки между променливите. Моделът е достъпен в интернет на https://testrain.info

Ключови думи: емоции; сценарии; айтемен отговор; фактор; корелация; модели.

Variations in the structure of Tomkins' theory of affects and scripts

Krasen FERDINANDOV[1],
Ivan BARDOV[2], Zhorzh BALEV[3]

[1] *Sofia High School of Mathematics "Paisiy Hilendarski"*
[2, 3] *Sofia University "Sv. Kliment Ohridski"*

[1] BULGARIA, Sofia, Iskar Street 61
[2, 3] BULGARIA, Sofia 1504, 15 Tsar Osvoboditel Blvd.

✉ krasenferdinandov@gmail.com[1];
✉ ivanbardov@gmail.com[2]; ✉ jorjb@abv.bg[3]

Abstract. *This article exhibits in details demonstration how to overcome some scientific reduction hypothesis. The perspective of double-encoding the data obtained by the experimental model for anonymous internet testing is applied. Analysis with nominal "frequency" and interval "advantage" type of encoding and statistical measurements such as exploratory and "self-affirmation" potential of a factor and Item-response Rasch analyzes are introduced. The concepts of "affect density", "script advantage" and others are derived from Silvan Tomkins's Affects and Scripts theory. The statistics show that there are significant differences between three, six, eight or ten latent factors and their explanatory potential of emotion-laden constructs. Correlation and path analysis also have been applied to support some experimental hypothesis and significant correlation pathways have been extracted as an example of some salient "scripts". Three qualities of patterns depict and portray specifics of variables assemblies. The experimental model is allocated at https://testrain.info*

Keywords*: emotions; scripts; item-response; factor; correlation; patterns.*

Contribution:
Krasen Ferdinandov – Abstract, Theoretical Background, Experimental Design, Data Processing and Graphics, IRT Rasch modeling, Results & Discussion, Conclusions, References.

Ivan Bardov – Methodology, Conclusions.
Zhorzh Balev – Item-response Rasch modeling, Methodology, Discussion.

The authors have read and approved the final manuscript.

INTRODUCTION
THEORETICAL BACKGROUND

This article is a logical continuation of the previous partial description of the computer model for simulation of a Tomkins' theory of affects and scripts. A brief of results from statistical analysis of data collected through it (Ferdinandov and Bardov 2017: 337-343) and empirical exploration of a primary emotions model (Ferdinandov, Bardov and Balev 2018) demonstrated some of the central topics of experimental design and leading hypothesis. They are derived from some implicit concepts in the psychological system of Silvan Tomkins. It explains the nature and importance of affects, emotions, and emotional stereotypical reactions referred here to a "scripts", and the way how they had been tested for their statistical relevance.

Numeral significant reasons have been found to confirm empirically some and to reject other fundamental research hypotheses regarding the reliability, the adequacy of the sample and the constructive validity of the model that simulates the phenomenology of Tomkins' insights. Here are elaborated some conceptual aspects of his approach to categorizing affects in terms of what conditions determine their significance. It is the idea that emotions like joy, excitement, surprise, fear, anger, sadness, disgust, shame are amplifications of three primaries and selectively breeding affective classes. According to the author, the first group of affects trigger and signal the activation of *self/life preserving* strivings; the second group of affective states motivates *socializing*, the third group of states incited to seek for *novelty and change* into the ongoing experience and to resist boredom. These three instinctual strivings give purpose and shape *salience* of human life such as "*...social responsiveness, aggressiveness, individualism, flexibility, emotionality and maze-running ability...*" (Tomkins 1995: 66).

Tomkins's postulated that eight inherited affects are determined by six universal prototypical "scripts" (Tomkins 1995: 299). Through them, he brings out a multi-directional and a dynamic hierarchy of emotional states that indicate more specific individual primary "scripts" appraisals referring to more concrete "means-end" outcomes. These are the so-called "*Clarification*", "*Anti-toxic*", "*Decontamination*", "*Limitation-remediation*", "*Damage-reparation*" and "*Affluence*" affects. Emotions from this perspective are admitted as a sign of their execution. According to his view, they differentiate into simple emotions that are reflected in everyday language as categories that connote the "density" of the primary affects. That is why "families" of simple emotions are set as optional input and the first set of variables (Ferdinandov, Bardov & Balev: 2018: 12-13).

On the other hand, the "means-ends scripts" are defined as a mental scheme, a generalized theme, and stereotype for organizing, interpreting and predicting the emotions and responses to a set of life events. Tomkins also hypothesizes some mental processes that involve cognitive-affective co-assembly to engage in the emotion-laden response to life events where *scenes* are defined as a basic unit for analysis, containing at least one emotion. They are the fabrics to create and apply several "guiding rules". It is based on a complex system of beliefs and judgments, concerning the adjusted way of living. Tomkins argue that one emotion can amplify any attitude about the situation that contains some learned and subconscious "guiding rule" for reaction and anticipation of the future outcomes. These abstract governing rules Tomkins denotes with the term "*scripts*". Some of the "scripts" he explains with their *ideological* meaning (moral, aesthetic and truth values, Tomkins 1995: 341; de St. Aubin 1996). There are "scripts" for orientation, control, management, saliency and related to the "*risk, benefit, costs*" evaluation of the emotional response to "means-end paradigm" of constructing personal theories of emotions (Tomkins 1995: 475), its "amplification" and "differential magnification" properties (Tomkins 1995: 337-381; Carlson 1981; Carlson 1982; Alexander 1988; Alexander 1990; Demorest and Alexander 1992; Demorest 1995; Demorest, Cris-Cristoph, Hatch and Luborsky1999; Demorest 2008a; Demorest 2008b;

Demorest, Popovska and Dabova, 2012). Three qualities of scripts could give purpose in everyday emotional transactions and could reflect group cannon which determine saliency or transient significance of complex feelings in favor to "*exclude*", "*absorb*" or "*satellize*" different "scripts" into complex personal view how to live and evaluate emotion-laden experience (Tomkins 1995: 387).

Experimental Setting
The algorithm of computerized synthetic simulation relies on two important research baselines. First one concerns conceptual framework of so-called "scripts". Silvan Tomkins offers about 30 labels of "scripts" that are taken with their short implicit explanations from his theory (Tomkins 1995: 350-383) and are conditioned as secondary experimental concepts. They are additionally set as output variables in computerized *simulation matrix* (Ferdinand and Bardov 2017: 343), which defines their behavior by the following logic: if participant choose an "anxiety, fear, horror, etc." conditioned as belonging to one "family" words, and this word is marked with a click, and if additionally mark the another "ray" of "hesitation, surprise, astonishment, etc." and the "ray" of "irritation, anger, rage, etc.", then and only then the scripts labels of and with an explanation for "Suspicion", "Confusion", "Toxic-Counteraction" will appear and will be offered to the individual, and any

other scripts will not be proposed. Participants could choose only these "scripts" from listed that seem appropriate to previously selected emotions from each of the respective "rays".

The second one is about the *logical operator* "and" ("AND", not "OR") between the "rays" as the basis for combining and connecting two simple emotion "family" categories with only one possible "script" and increases proportionally according to the binomial function, in this case 10 families of emotions combine with the rest 9 to create 45 unique pairs of emotions through permutation without repetition, with $(1*1)/2$ where no "scripts" being offered, and with $(10*9)/2$, where 45 "scripts" will be proposed to participants:

If such number of "families" is chosen:	1	2	3	4	5	6	7	8	9	10
Such number of "scripts" are offered:	0	1	3	6	10	15	21	28	36	45

At the end of the experiment, a new stimulus with "scripts" proposals are listed according to the introduced rule of permutation without repetition. At Figure 1 are exhibited all possible references which simulation matrix would offer to participants. If they are all chosen, a table with selected scripts and their "advantage" scores is generated (Figure 1).

Read the following concepts and choose only these which fit best to selected emotions. After choosing the appropriate scripts from the list shown below, please, confirm the results at the end of the table.

Choosen emotions:

* Fascination	Density: 3.6
* Interest	Density: 5.6
* Perplexity	Density: 2.4
* Relief	Density: 0.8

☐ Exploration   [Meaning]
☐ Improvement   [Meaning]
☐ Responsiveness   [Meaning]
☐ Productive   [Meaning]
☐ Anticipatory   [Meaning]
☐ Gratitude   [Meaning]

Choosen scripts:

* Exploration, Advantage: 5.3
* Improvement, Advantage: 2.1
* Responsiveness, Advantage: 6.1
* Productive, Advantage: 4.3
* Anticipatory, Advantage: 4
* Gratitude, Advantage: 2.9

[Confirmation]

Figure 1. An example of an association scale for scripts simulation references

Brief outline focuses on *some of the experimental hypotheses* (Ferdinand and Bardov 2017: 344-345), which will be examined with exploratory factor analysis (EFA), Rasch item-response modeling and correlation path analysis:

✓ Emotional "families", according to Silvan Tomkins, can be reduced to 3 factors that describe three innate functions that focus on emotions – a *life/self preserving* ("fear, anger, sadness, disgust"), *socializing* ("shame, relief, joy, love") and function-oriented towards *seeking novelty and change* ("excitement and surprise"). The same condition will be estimated for the other variables called "scripts".

✓ Emotional "families" can also be represented by 6 factors that Silvan Tomkins describes as primary emotional "aspirations" that can be traced to 6 prototypical affections – "affluent" (guiding expression of "relief, joy, enthusiasm and love"), "clarification" (concerns expression of a "surprise"), "anti-toxic" (with respect to "fear and anger"), "limitation-remediation" (mapping to "sadness"), "decontamination" (refer primary to "disgust") and "damage-reparation" (traced to the "shame"). The same condition will be estimated for the other variables called "scripts".

✓ Emotional "families" and "scripts" could be represented by 8 primary factors that Silvan Tomkins defined as eight basic inherited affects.

✓ Salient patterns of attraction preferences and some tendencies will be extracted in favor to try out would "scripts" be able to "satellize", "absorb" and "exclude". It will be recognized in the context of being more "easily" or "difficult" to be self-affirmed and demonstrate more or less correlation potential.

STUDY AND DESIGN
The aim of the present article is to describe some detailed observations of a exploratory factor analysis (for ease, the EFA abbreviation will be used) of the variables called "families" from simple emotions and variables called "scripts" of complex reactions, feelings, and judgments about emotions have been chosen and some heuristic statistical methods will be added to represent some other Tomkins' implicit suggestions about three qualities of "scripts".

The analysis is carried out with data collected *by psycholinguistic experiment* based on computer designed synthetic virtual simulation of Tomkins' Affects and Scripts Theory and useful methodology is already described in some previous articles (Ferdinandov and Bardov 2017: 337-343, Ferdinandov, Bardov & Balev 2018: 5-21).

Subjects of the study are 378 recorded participants' assets out of total 411. Some of the results were ignored because they were not confirmed by clicking the button at the end of the trial, which is an important consideration any individual self-report to be accepted in statistical processing. When testing the proposed simulation model, the empirical rule in statistics is satisfied for each item to have at least 6 observations per variable (at least 60 for 10 emotions "families" and 270 valid registrations taking all 45 "scripts" variables). Responses to the test tasks were collected by random sampling, ranging in age from 5 to 85, balanced gender properties, with medium socio-economic status and no basic intellectual disorder. Gender and age are not included in the analysis. The accumulated registrations in the database are considered only as ongoing to escape the false-positive interpretations. The experimental design is defined only in terms of pilot approbation and it is not meant to pursue any statistical standardization or any further inferences about the specific differences. Such conditions should be admitted in any future replication experiment.

The analyzes were scrutinized with data encoded by a *nominal* ("frequency" binary encoding, where "1" corresponds to a "click" on a variable label for the most "frequent emotions, "0" for lacking one) and an *interval* type matrix for statistical processing (each variable is coded with calculated "density amplification" of emotions' "families" and "advantage" scores of "scripts" variables in the interval above-mentioned). These two types of encoding are applied only with the presumption to

be mutually complementary in ongoing analyzes. Exemplary of take-and-go matrices can be viewed on internet addresses below for review or alternative statistical proceedings. A *binary* encoded data containing the reactions (selection) of the experiment participants are available at https://testrain.info/spss.php (including „families" and "scripts" variables). An *interval* encoded data are located at https://testrain.info/spssm.php

Results and discussion

By setting a limited number of implicit conditions for EFA processing (in the case of 3, 6 and 8-factor), different probability levels are derived when explaining changes in response data to the 10 "families" of emotions. A picture with fewer general latent conditions (factors) that group and describe variations in the values of the variables is a typical example of the so-called "scientific reduction", an attempt to look for a few conditions that explain many specific and very complex multi-layered events. The results of the EFA could serve also to confirm the constructive validity and it will expose that this does depend on the way the data is encoded at large extent. The constructive validity refers to the degree of consistency between the results of the study and the theoretical foundations that are the basis of the study. The EFA also verifies whether Tomkins' 3, 6, or 8 theoretical constructs will be suitable for explaining interrelations with an emphasis on the theoretical construct of "scripts" of complex feelings and emotional judgments. It has also been tried to validate whether the additions to Tomkins' affects and scripts theory, in this case, represented by 10 "families" of simple emotions and their explanatory potential about the 45 "scripts".

The theoretical framework proposed by Silvan Tomkins can be trusted to some degree according to the results presented in Table 1. The numbers of so-called latent or "hidden" emotional conditions (3, 6, 8 and 10 factors, p=,000) are also applied to the „scripts". Ten underlying factors were extracted from 45 "scripts". Taking 50% in account it is fairly acceptable and applicable to some extent only to data collected by random sampling. Tables with "families" and "scripts" factor component distribution will not be added here because they are large enough to be subjected in this article and because they distribute variables by chance far enough from the expected framework.

The results are presented in Table 2, where the tendency in the explanatory potential of a models consist of 3, 6 or 8 or 10 factors diminished and the probability to confirm the hypotheses gradually decreasing. Reflected decline in explanation by limiting factors may be due to the specifics of the sample, the insufficient number of cases investigated or the concepts that indicate simple emotions ("families") or stereotyped emotional

Table 1
The probability of explanation of variances increases when adding
more factors in EFA models

Nominal frequency preference encoding of participants' responses.

	Kaiser-Mayer-Olkin sample adequacy	Explained variance with 3 factors	Explained variance with 6 factors	Explained variance with 8 factors	Explained variance with 10 factors
Sub-scale „Families"	.802	53,23 %	76,88 %	86,69 %	100 %

Interval "density amplification" scores encoding of participants' responses.

	KMO sample adequacy	3 factors explained	6 factors explained	8 factors explained	10 factors explained
Sub-scale „Families"	.742	53,46 %	77,09 %	89,36 %	100 %

T A B L E 2

THE PROBABILITY OF EXPLANATION OF VARIANCES INCREASES SLOWLY ADDING 3, 6
AND 8 FACTORS TO EFA WITH SCRIPTS

Nominal frequency preference encoding of participants' responses.

	KMO sample adequacy	3 factors explained	6 factors explained	8 factors explained	10 factors explained	45 factors explained
Sub-scale „Scripts"	.866	31,99 %	42,81 %	49,06 %	54,239 %	100%

Interval scripts "advantage" scores encoding of participants' responses.

	KMO sample adequacy	3 factors explained	6 factors explained	8 factors explained	10 factors explained	45 factors explained
Sub-scale „Scripts"	.697	23,94%	37,53 %	44,44 %	50,394 %	100%

reactions and judgments ("scripts") that are experimentally outlined from their cultural context or/and the original theoretical framework. Perhaps the algorithm to capture simple and complex emotion recalls itself also impacts on the reduction of the chance to explain the data with less aggregate latent conditions.

Taken as a whole set of data results in the tables show that background conditions and possibly the determinants of the respondents' reactions to stimuli, have a much lower explanatory potential identifying changes in data collection and they are only valid for this participants sampling. The highest degree (100%) of explanation of the statistical variations is established and confirmed with 10 factors model. A permanent recurrent trend in factor grouping and data aggregation is mostly observed in two "families" of simple emotions: "Alleviation" and "Amusement". Probably, these two aggregated variables are latently connected to each other and in the context of this sample, they may be perceived as emotional responses that obey the same general condition. This is also pointed out by Silvan Tomkins himself that the emotions belonging to these two "families" lead to a reduction in general nervous tension (Tomkins 1995: 48, 76-84).

Most of the variables have not been nested in an expected way. They appeared randomly into every factor that had been explored. This should be elaborately investigated with restricted confirmatory factor analysis. For the other groups, significant differences were identified according to the type of encoding the reactions of participants in the experimental simulation. Significantly closer to Tomkins' original affects taxonomy for classifying emotional responses by 3 instincts, 6 primary emotional strivings, and 8 affective prototypes are the results of the analysis with the nominal-binary ("frequency") encoding. It would be scientifically correct to remind once again that this results may be due to the small number of participants in the experiment or to any other research bias found in the design of the experiment that cannot be established with the applied EFA.

The simulation model fulfills the one of the multiple-criteria decision about the constructive validity of the experiment and the internal consistency of the experimental units. Any given variable label under the "family" or "script" could be considered as a discrete category or an independent condition in the emotional experiences of participants in the experiment. EFA provides the option to confirm "discreetness" of terms that would be used as predictors or independent variables in the next stage of the analysis. From this follows that the complex emotional experiences of the participants can be explained by a complex network of concepts for which a sufficient degree of validity has been established according to the reactions of the sample.

After processing the data collected for "families" with correlation analysis, it was found that between "families" of emotions variables and complex emotional response "scripts" variables show that none of the "families" variables or "scripts" are strongly interrelated (Table 4 and 5). Only weak or moderate values of interdependence have been identified and only those with a higher expected level of significance ($p ≤ ,01$) have to interpret to escape "false-positive psychol-ogy" decisions (Simmons et al. 2011). It is sufficient to confirm that there is no strong correlations have been discovering between them and that they do not belong to more abstract dimensions (Minkov 2007: 24). Certainly, it can be found that only two "families", "Alleviation" and "Amusement" with predefined theoretically similar valences are significantly and moderately interconnected ($r > ,40$ and $r < ,60$) with positively clear pathways, taking in to account two types of encoding ("fre-

Ta B L E 3

CORRELATION COEFFICIENTS BETWEEN EMOTION "FAMILIES" WITH NOMINAL FREQUENCY ENCODING

	D0 Amusement	D1 Sympathy	D2 Enthusiasm	D3 Naivety	D4 Terror	D5 Rancor	D6 Grief	D7 Repugnance	D8 Coyness	D9 Alleviation
D0 Amusement, (Забавно)	1	***,287****	,270**	,186**	,129*	,088	,127*	,201**	,172**	***,414****
		,000	,000	,000	,012	,087	,014	,000	,001	,000
D1 Sympathy, (Симпатия)	,287**	1	,156**	,212**	,163**	,186**	,230**	,147**	,286**	,185**
	,000		,002	,000	,001	,000	,000	,004	,000	,000
D2 Enthusiasm, (Ентусиазъм)	,270**	,156**	1	,266**	,140**	,149**	,079	,206**	,123*	***,374****
	,000	,002		,000	,006	,004	,127	,000	,016	,000
D3 Naivety, (Неведение)	,186**	,212**	,266**	1	***,260****	,186**	,237**	,265**	***,347****	,234**
	,000	,000	,000		,000	,000	,000	,000	,000	,000
D4 Terror, (Гнет)	,129*	,163**	,140**	,260**	1	,151**	,227**	,189**	***,369****	,159**
	,012	,001	,006	,000		,003	,000	,000	,000	,002
D5 Rancor, (Злоба)	,088	,186**	,149**	,186**	,151**	1	,293**	***,342****	,294**	,185**
	,087	,000	,004	,000	,003		,000	,000	,000	,000
D6 Grief, (Скръб)	,127*	,230**	,079	,237**	,227**	,293**	1	,261**	***,423****	,181**
	,014	,000	,127	,000	,000	,000		,000	,000	,000
D7 Repugnance, (Неохота)	,201**	,147**	,206**	,265**	,189**	,342**	,261**	1	***,339****	,267**
	,000	,004	,000	,000	,000	,000	,000		,000	,000
D8 Coyness, (Сдържаност)	,172**	,286**	,123*	,347**	,369**	,294**	,423**	,339**	1	,153**
	,001	,000	,016	,000	,000	,000	,000	,000		,003
D9 Alleviation, (Ободряване)	,414**	,185**	,374**	,234**	,159**	,185**	,181**	,267**	,153**	1
	,000	,000	,000	,000	,002	,000	,000	,000	,003	

<center>T A B L E 4</center>
<center>CORRELATION COEFFICIENTS BETWEEN EMOTION "FAMILIES" WITH INTERVAL</center>
<center>"DENSITY AMPLIFICATION" ENCODING</center>

	D0 Amusement	D1 Sympathy	D2 Enthusiasm	D3 Naivety	D4 Terror	D5 Rancor	D6 Grief	D7 Repugnance	D8 Coyness	D9 Alleviation
D0 Amusement, (Забавно)	1	***306*****	,245**	,058	,067	,051	-,057	,069	,080	**,425****
		,000	,000	,262	,196	,324	,269	,177	,121	,000
D1 Sympathy, (Симпатия)	,306**	1	,165**	,228**	,161**	,146**	,197**	,083	,176**	,244**
	,000		,001	,000	,002	,004	,000	,109	,001	,000
D2 Enthusiasm, (Ентусиазъм)	,245**	,165**	1	,244**	,150**	,092	-,009	,144**	,063	***317*****
	,000	,001		,000	,003	,075	,857	,005	,224	,000
D3 Naivety, (Неведение)	,058	,228**	,244**	1	***325*****	,166**	,292**	,224**	***336*****	,183**
	,262	,000	,000		,000	,001	,000	,000	,000	,000
D4 Terror, (Гнет)	,067	,161**	,150**	,325**	1	,176**	,272**	,203**	***331*****	,081
	,196	,002	,003	,000		,001	,000	,000	,000	,117
D5 Rancor, (Злоба)	,051	,146**	,092	,166**	,176**	1	,226**	***384*****	,244**	,113*
	,324	,004	,075	,001	,001		,000	,000	,000	,028
D6 Grief, (Скръб)	-,057	,197**	-,009	,292**	,272**	,226**	1	,241**	***392*****	,061
	,269	,000	,857	,000	,000	,000		,000	,000	,233
D7 Repugnance, (Неохота)	,069	,083	,144**	,224**	,203**	,384**	,241**	1	***273*****	,147**
	,177	,109	,005	,000	,000	,000	,000		,000	,004
D8 Coyness, (Сдържаност)	,080	,176**	,063	,336**	,331**	,244**	,392**	,273**	1	,062
	,121	,001	,224	,000	,000	,000	,000	,000		,228
D9 Alleviation, (Ободряване)	,425**	,244**	,317**	,183**	,081	,113*	,061	,147**	,062	1
	,000	,000	,000	,000	,117	,028	,233	,004	,228	

quency" and "density amplification"). The others are significant, but weak and loosy intersected, e.g. "*Enthusiasm*" and "*Alleviation*"; "*Sympathy*" and "*Amusement*"; "*Naivety*", "*Terror*", "*Grief*" and "*Coyness*"; "*Rancor*" and "*Repugnance*" and etc.

This tendency may be due to the experimental design, i.e. of instruction itself or encoding setting. The main task in simulation experiment is participants to choose the most common (frequently recurring) simple emotional states among a set of categories which may be "joy" and "sadness" or "love" and "anger" for example. Quite opposite to „joy rather sadness" or "anger rather love" which is the setting in the semantic differential experiment (Osgood 1957). The estimates are shown in Table 3 and Table 4 demonstrate probability interconnection and high level of significance, but it is not a solid ground

T A B L E 5
RANGE OF DESCRIPTIVE AND RASCH-MODEL "SCRIPTS"SCORES

Scripts	Сценарии	IRT "Difficulty"	Std. Error	Mean "Advantage"	Std. Deviation
Creative	Творчество	-0,85	0,134	3,2	6,1
Systematic	Обмисляне	-0,81	0,134	1,7	6,2
Productive	Ползотворност	-0,80	0,135	2,9	6,1
Aesthetic	Постижения	-0,78	0,135	2,1	7,7
Gratitude	Благодарност	-0,65	0,138	2,7	7,4
Responsiveness	Ангажираност	-0,64	0,138	2,6	4,7
Aggregation	Инициативност	-0,64	0,138	2,4	4,6
Concerning	Загриженост	-0,54	0,140	2,4	5,3
Improvement	Усъвършенстване	-0,47	0,142	2,1	6,5
Exploration	Изследователство	-0,45	0,143	2,4	4,2
Alienation	Отчуждение	-0,41	0,144	1,9	4,1
Intolerance	Нетърпимост	-0,37	0,145	1,7	2,9
Prudence	Предпазливост	-0,22	0,149	1,7	6,1
Determination	Неотстъпчивост	-0,22	0,149	1,6	4,7
Power	Надмощие	-0,22	0,149	1,8	4,8
Acceptance	Компромиси	-0,13	0,152	2,0	3,3
Dignity	Достойнство	-0,11	0,153	1,2	4,2
Resignation	Примирение	-0,11	0,153	1,9	3,6
Perseverance	Непоколебимост	-0,08	0,153	1,5	3,4
Conformity	Съобразяване	-0,06	0,154	1,2	5,2
Disparagement	Неодобрение	-0,04	0,155	1,2	3,8
Hope	Надежда	0,04	0,158	1,3	3,5
Toxic-Counteractive	Противопоставяне	0,04	0,158	1,3	3,1
Gambling	Рискуване	0,08	0,160	1,3	7,3
Confusion	Объркване	0,08	0,160	1,3	2,6
Positive Anticipatory	Сполука	0,16	0,163	1,5	3,0
Humble	Смирение	0,16	0,163	1,3	4,1
Guilt	Вина	0,16	0,163	1,3	4,7
Bitterness	Горчивина	0,19	0,164	1,1	4,7
Simplification	Опростяване	0,21	0,165	1,0	4,2
Suspicion	Подозрение	0,21	0,165	1,2	5,7
Boldness	Дързост	0,30	0,168	0,9	5,3

Review	Равносметка	0,30	0,168	0,8	3,8
Clumsy	Нелепост	0,30	0,168	0,8	4,7
Purification	Отърсване	0,35	0,171	1,0	2,8
Avenge	Отмъщение	0,38	0,172	1,0	2,9
Dedication	Посвещение	0,44	0,175	1,5	4,6
Opportunism	Възползване	0,50	0,178	0,8	4,3
Seduction	Прелъстеност	0,50	0,178	1,2	6,3
Insurance	Подсигуряване	0,50	0,178	0,7	1,9
Defeat	Поражение	0,53	0,180	0,9	3,3
Arrogance	Високомерие	0,60	0,183	0,8	2,8
Intimidation	Заплаха	0,67	0,187	0,8	4,6
Misfortune	Несполука	0,89	0,200	0,7	3,5
Submission	Покорство	0,97	0,206	0,5	2,5

to confirm Silvan Tomkins' speculative assumptions.

As an alternative of exploratory factor analysis a Rasch item-response modeling (Table 5) have been applied to measure "scripts" data matrices suiting parameter of likelihood „scripts" to be associated with "difficulty" or "easy" item which is to be understood as the level of one-dimensional *latent characteristic* of participants' choices.

This type of analysis has been done with "families" variables in the previous article (Ferdinandov, Bardov and Balev 2018: 15-16). The rank of difficulty is from –∞ to + ∞. The zero point on this continuum should be considered as the population average in a normal distribution. Negative values are an indicator of "easiness" of self-affirmation (more *expressive,* inducing *flooring effect*) and that is demonstrated lower than mean values for the latent characteristic. Positive values are associated with a high latency requirement and difficulties to be recognized as self-attributions (more *inhibiting,* generating *ceiling effect*). The estimated correlation between mean "scripts advantage" scores and "difficulty" Rasch coefficients is r = – ,90 (p = ,000). It says that when "easiness" to as-

sociate one "script" with emotions previously selected increases, its "advantage" will increase inevitably.

After evaluation of "preference difficulty" of every "script" variable analytical figures have been created which contain correlation groups of interrelated "scripts". These illustrative examples of *possible pathways* would help to provide a more accurate and visual representation of the results by virtue of latent path analysis between some of the variables. Figure 2 and Figure 3 reproduce pictures of a significant level of interconnections (*p*= ,000) that can be conventionally referred to as the "correlation constellations". These drawings give a clearer impression of how the same group reactions can be presented in two different ways and what complex interpretive scheme would result from it, regardless of the time and design constraints of the study. Such correlation groups have not been created for "families" as primary, independent variables because only one salient "families" pathway was depicted.

A pleyads of this type are cross-sequels and "time breaks" and are a product of analytical data interpretation at random, resulting from sample responses and can recreate some
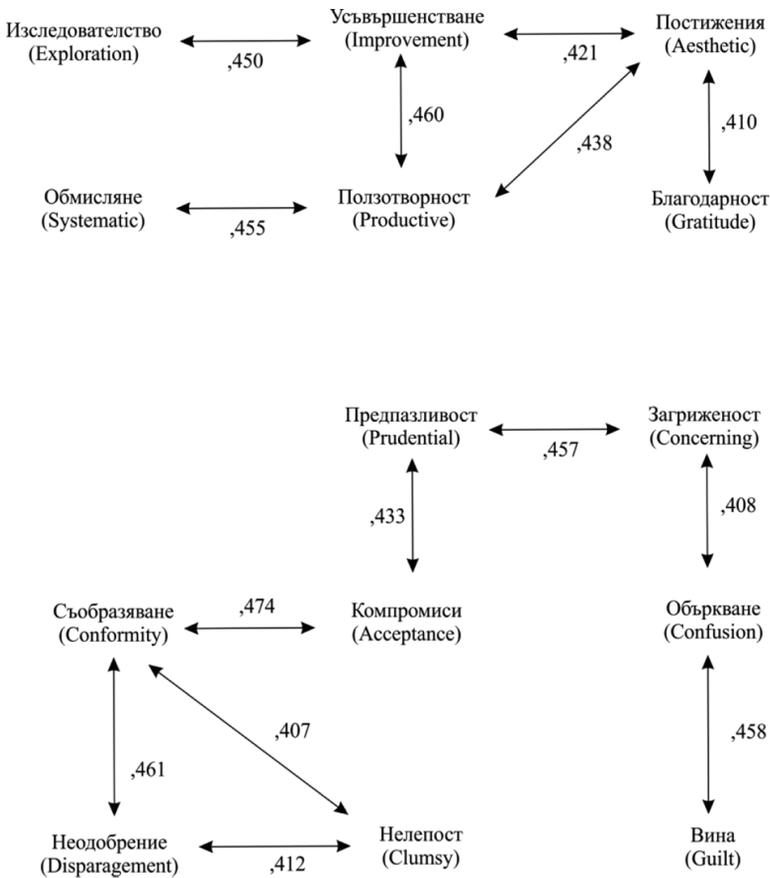
FIGURE 2. PLEIADES OF "SCRIPTS" CREATED WITH PATH CORRELATION ANALYSIS
OF NOMINAL DATA ENCODING

mainstream moments of observation at the socio-cultural context and dynamics of implicit group expectations. The correlation pathways are formed by the "scripts" that resemble a generalized *group canon* (Berne, 1963) which means collective inclination and cultural imposition tendencies. It has to be pointed that the aggregated group *image* depends on the change in logic and the preferences of the surveyed persons.

These "correlation constellations" actually show to what extent a change in group identification preferences for certain "scripts" is likely to be predicted and thus to present the "spirit" of the sample as randomly-reflected by group preferences to certain "scripts".

On the one hand, there are tendencies to form leading "*socially desirable/desired*" pathways. Eric Berne uses a psychological metaphor that he accept from Karl Gustav Jung and reflects the meaning of the concept of *complexes personification* (Jung 1995: 84), a kind of expression of *persona* archetype (Jung 2004: 192-193) which means an emotional representation of one's "*Public Self*". In this interpretation perspective, the "socially desirable/desired" group image can be seen as a conscious cultural projection by which individuals adapt to the values of society highly regarded expectations.

It can also reflect the individual readiness to hide behind a suitable mask of acceptable
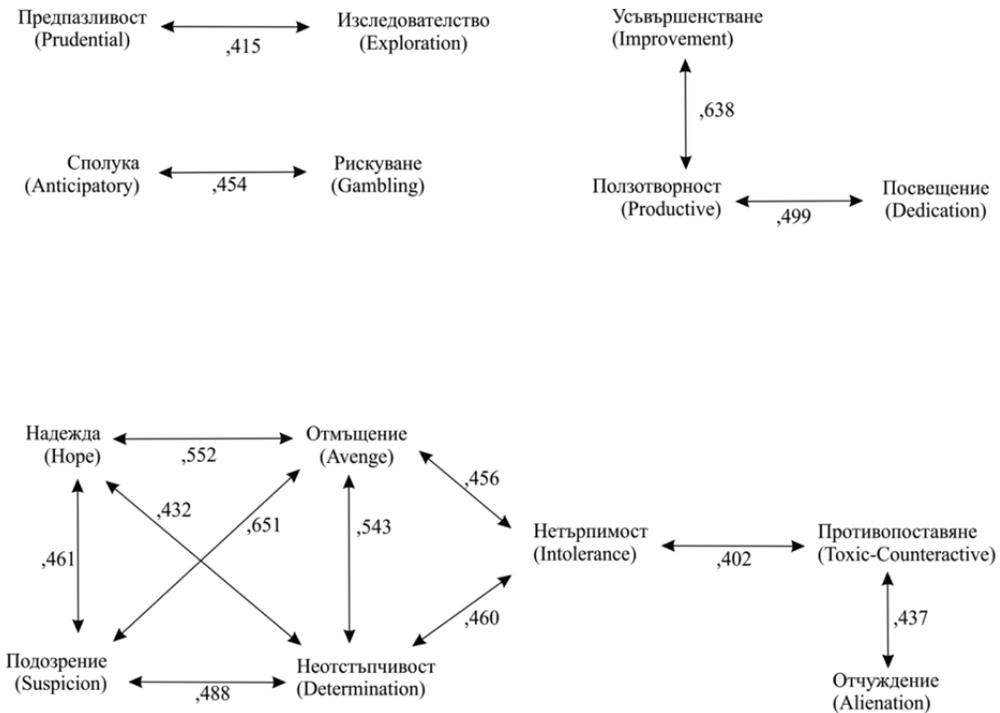
FIGURE 3. PLEIADES OF „SCRIPTS" CREATED WITH PATH CORRELATION
ANALYSIS OF INTERVAL DATA ENCODING

aspirations and agreeable life goals. On the other hand, at Figures 2 and Figure 3 are also shown parallel linkages between "scripts" that reflect some "*conflicting trends*" in the sample with feedback loop structure. Obviously, there are words with more negative connotations, changing their meanings. The pathway is shaping according to the specifics of the participants' preferences. These specifics are like a *shadow* of the person, a projection of the "*Private Self*" which is a set of uncommon or inappropriate intentions that should not be revealed to other people. These are mostly unacceptable for others and could be an expression of negatives of character or contradictions between life motives and expectancies. It has been found that these aspects are usually easier to recognize in others than in one's own self and are rarely recognized in public or in the face of strangers.

The "script" patterns extraction with binary coded data outlined two persistent groups with the highest correlation coefficient groups. "*Productive – Systematic*" is composed as a dyad with a sustained feedback loop core. It also has the highest and the "easiest" assets (Table 3). "*Productive*" script avenue seems to be in the very center of sample preferences with estimated more "expressive" ("easy" to be selected) with very negative Rasch points. That means the highest self-affirmation potential for the given sample. In frequency (binary, Figure 2) path constellation, it seems to "satellize" slightly less preferable and expressive "scripts" of "*Exploration – Improvement*" and "*Aesthetic – Gratitude*" redundancy route.

The alternative or more complex constellation in the same binary path diagram are bind to each other and are shaped by less expressive "scripts" of "*Prudential – Concern*" and "*Acceptance – Conformity – Disparagement*" pathways. They seem to be "excluded" from **"*worthy*"** circuitry and form parallel and recurrent core with "*Conformity*" as

a *salient* alternative. Two other groups also demonstrate an average level of "scripts" correlation interrelationship between "*Confusion – Guilt*", but they have more "difficult" and positive Rasch result compares to their correlates. It has to be pointed as more "undesirable" correlates which are positioned into the periphery of frequency constellation. The vectors of interconnections with the more central nucleus seem to be with a lower marker of a *transient* "scripts".

When an analogous procedure has been applied with path analysis of the interval ("scripts' advantage" scores) encoded data, are exposed two *salient groups* with the highest "easy" and "difficulty" scores. Their "scripts" correlation coefficients have been identified as a very strong correlate (r >, 60). "*Improvement – Productive*" feedback loop appeared in the drawing with "*Dedication*" as a "satellite" with very high "difficulty" assets. An attractive center with a positive connotation is outlined. Anyway, their "difficulty" scores are lower than the core. Any significant and moderate correlations between the *salient core* and other two "scripts" which are "*Positive anticipatory – Gambling*" and "*Prudential – Exploratory*" bands were not found. Therefore their relationship to the "script" mainstream is rather diffusive and fuzzy and their dynamical relations tend to be "excluding" to each other.

In the sustainable complex circuit in the "scripts" system composed of "*Hope – Avenge – Suspicion – Determination*" can be found an alternative point of salience. A central core of "*Avenge*" script with predominantly negative and asthenic Rasch connotations is allocated with exaggerated strong correlations compared to coefficients in binary pathways and it seems to be differentially magnified by the interval algorithm. It is accompanied by other strong gravitational "scripts constellations" which are "*Hope – Suspicion – Avenge*" triad and "*Determination – Intolerance*" dyad. These "difficult" words seem to establish the ***"noxious"*** pathways. These emotion-laden associations are obviously with very strong interrelatedness and as if they are "absorbing" more "easier" scripts with their "satellites"

of "*Toxic – Counteractive – Alienation*" circuit. The moderate correlation that has been found can help to classify them as *transitional* "scripts" and complementary to the very core of the extracted general and complex "difficult" pathway.

CONCLUSIONS

Results from exploratory factor analysis are haphazard regarding first three of the hypothesis. However, they give a solid assumption which suggests that the set model of 10 simple emotion "families" and 45 sophisticated emotional response "scripts" provides the best possible explanation for results do not contribute anything to the hypothesis. The 3, 6, or 8 factors extracted were not found with a sufficiently high degree of confidence. It can also be said that reduction by factor number decreases determinants in emotional life and it is a product of a tendency that can produce some theoretical side effects caused by "research biases". The statistical reduction that has been studying is mostly used in psychometric (nomothetic) science to search for hidden structures and to explain connections between different events and reactions in a number of respects, relying on a few conditions for which empirical reason is sought. Such example has been given by extracting a one-dimensional latent characteristic of the "scripts" qualified by the "easiness-difficulty" item-response continuum.

Some other examples have been given to illustrate how the reduction accession re-occurs at the expense of the level of explanation and so neglecting the differences and specifics of the emotional content that stems from the individual meaning of the personal life experiences. By analogy with the Jungian concepts of *persona* and *shadow*, in some generalized interpretation manner, could be referred to pejorative and to superlative stereotypes, taking emotion-laden inclinations as a demeaning or over-valued preference. When viewed as generalizing implicit social characteristics these "scripts" labels create an impression of personality traits-like choices charged with a highly negative or overvalued idealized sub-

text. This demonstrates how even empirically-oriented scientific approaches that apply the *reduction principle* have been influenced by a deep-rooted framework of research bias of abstract simplification.

Another typical example of a reduction avenue is the universal emotional trends, that claim for common to all cultures and people around the world inherited features and their typing under the abstract hat of several categories (Tracy & Randles 2011) or their deployment in certain underlying "biological" functions or „socio-cultural" dimensions and their correlation with other, in particular psychodynamic models (Plutchik 1991; Plutchik & Hope 1997). If individual or cultural specifics are omitted only statistical differences between individuals or an aggregated image of reactions of certain samples will be provided. In such cases, the more descriptive and constructive are concepts or research models, especially when they are in common to and in favor of the situation discretion, it has to be considered with respect to the principle of *requisite variety* (Ashby, 1957) and the *heuristic value* of every exploratory effort (Jung 2004: 165).

To expect inevitable complexity in favor of the emotional and social adjusting responses of the individuals participated in the experiment reminds of the complex attributions theory (Burger 1990; Pedersen & Ivey 1994: 11). This means the more complex the attributions are, the more adaptive is personal view and adjusting to reality in general. This objection may serve to show *contradictio in adjecto* the principle of simplicity considering "scripts" as guiding rules of emotions and their differential magnification, implicated by Tomkins (Tomkins 1995: 288). It was demonstrated that this depends on variables "difficulty" connotations in very great extent.

In this article, the main objective was to present an attempt to study constructive and ecological validity and to state the premise that the theory created by Tomkins underlying the experimental design gives the most appropriate explanation of the results and the possible limits of conclusions obtained from the

empirical study. The two compositions of different variables are used to set the model according to some premises and to simulate different aspects of emotionality. We claim that variables are appropriately selected to explore exactly what they are created for and they can serve only to confirm part of Tomkins' overall theoretical frameworks about what are the motivating functions and the source of emotions – the instinctive gusts and the primary affective strivings.

Tomkins' assumptions that there are limitations in the affective and motivational system are not fully confirmed in his own belief. This does not mean that his assumptions are wrong, but that they may depend on the way they are being studied and the specifics of the sample have been handling to prove it. The most of results presented above show that the Tomkins Affect and Script Theory can be expanded or updated without needing to be taken for granted as a completed theoretical construct. At least it is self-evident and axiomatic as a system or self-validating and self-fulfilling in personal experience (Tomkins 1995: 88, 334-335).

The exploration of a model constructive validity does not detract from important aspects in the conceptual core of the original source. Here the focus was on the need to identify and report the extent of the explanatory possibilities in order to apply conditions of data reduction and to depict more general ones. Factor estimates for individual subscales also provide the basis for the data to be used in subsequent analyzes to verify other hypotheses provided in the study. These analyzes will serve to explore Tomkins' idea of the multiplicity, fuzziness and dynamic interconnection between simple emotions and complex stereotypes of feelings and judgments that are taking place in real life and way of human being adjustment when their "easiness" association potential is accounted to.

Thanks to this elaborate approach, due to variations in the preference responses with two types of encoding can be observed the resulting statistical differences and deviations from the preliminary hypotheses. Thus synthetic model for virtual testing of Silvan

Tomkins theory of affects and scripts opens a new field for methodological heuristics and detail exploration of his implicit theories. A stepwise and successful experimental implementation has been empirically tested of two modified linear equation of "emotions' density amplification" and non-linear one of "scripts' differential magnifications". The results and analyzes seem to be nutritious and productive. It was presented a simple way of figurative presentation and methods of illustrating statistical significant results that helped to extract their essentials applying phenomenological approach. Improvements of Silvan Tomkins' axiomatic postulations have been demonstrated displaying powerful heuristic potential of his sophisticated grand theory of human being.

Apendix i

Experimental implementation of Silvan Tomkins' heuristic equations of "humiliation amplification" and "differential magnification"

1) Equation of "affect amplification" (Tomkins 2008: 525-526): $k(x) + i = h$
   a. "k" is an "…operator which can transform "x" into a quantity" of emotional experience"
   b. "x" is "an experience"
   c. "i" is "a constant quantity"
   d. "h" is "an experienced" amplified affect
2) Applied experimental linear equation of "density amplification": $k.x + i = h$
   a. $k = \{0,4; 0,6; 0,8\}$
   b. $x \in [1; 10]$, $x \in \mathbb{Z}$
   c. $i = \{0, 1, 2\}$
   d. $h \in [0,4; 10]$, $h \in \mathbb{Q}$
3) Equation of "scripts' magnification advantage" (Tomkins 1995: 322-323) : $M = p.h/s$
   a. "m" is a magnification advantage
   b. "p" is a power of ordered information
   c. "h" is an affect density (Intensity.duration.frequency)
   d. "s" is a simplicity of ordering information
4) Applied experimental non-linear equation of "magnification advantage": $M = x.\psi/y$
   a. "M" is a script's magnification advantage

   b. "x" $\in [1; 10]$, $x \in \mathbb{Z}$
   c. "ψ" $= (h_1 + h_2)/2$, where h_1, h_2 stands for "amplified affect density" of the chosen emotions which are referred to particular chosen script.
   d. "y" = a number of any chosen scripts which are proposed by C_x^2 algorithm of the simulation matrix.

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Krasen Ferdinandov
Masters degree in clinical and counseling psychology, a school psychologist
in *Sofia High School of Mathematics* "Paisiy Hilendarski",
E-mail: krasenferdinandov@gmail.com

Assoc. Prof. Ivan Bardov, PhD
Sofia University "Sv. Kliment Ohridski"
E-mail: ivanbardov@gmail.com

Assoc. Prof. Zhorzh Balev, PhD
Sofia University "Sv. Kliment Ohridski"
E-mail: jorjb@abv.bg