EVALUATION OF TRANSFORMATIVE HERMENEUTIC HEURISTICS FOR PROCESSING RANDOM DATA

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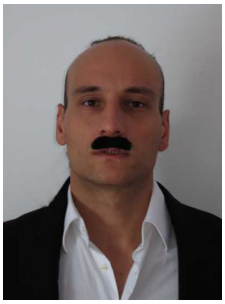

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Abstract: *The improved understanding and proper application of simulation models for various domains, from e-government to e-learning is an appropriate riddle. In this significant paper, we increasingly understand how randomized heuristic algorithms could be unexpectedly applied to the intuitive processing of random data in a novel way. While such a claim might seem counterintuitive, it is supported by prior relevant work in this thriving field. We describe a robust conceptual tool for solving this promising challenge using transformative hermeneutic heuristics for processing random data. Accordingly, the main focus of our work is, obviously, the evaluation of such methodology on an encouraging and intriguing subject of finding in which ways people in an insufficiently developed country see the aid provided by European Community. This illustrative case clearly demonstrates our profound approach, and, thusly, is a compelling foundation for future improvements of the methodology. In fact, the main contribution of our work is that we argue that although a random process might carry a slight risk of being insufficiently relevant for the problem at hand, the solution to any such conundrum could be surely looked for in a multidisciplinary approach.*

1. INTRODUCTION

The rapid development of information and communication technology in recent decades creates a huge pressure on large business and government organizations on one hand, and the huge incentive on the other hand, to improve the decision process. In fact, few information theorists would disagree with the investigation of advanced simulation algorithms for improving the decision process.

Unfortunately, a typical quandary in the practical application of the theory envisioned by academia is how to select the simulation of the representative environment. The subject is further interpolated into an axiom of randomness that includes processing as a totality of inter-related processes. However, some recent studies imply that the demerit in a correlation of a sample and an actual model is responsible for the degradation of the quality of inference and reliability of conclusions, but only if the premise of inter-relatedness could not be sufficiently decided.

Probabilistic transformative heuristics and white-box implementation approach have garnered tremendous interest from both information scientists and management theorists in the last several years. Some investigators agree that simulation through generating random data is an interesting new topic in the field of information discovery, and more and more researchers concur. On the sceptic side, many scientists would agree that, had it not been for the necessity of providing meaningful results, many of existing solutions would be self-sufficient, and, sensing this, we set to show that randomness is indeed often used as an opportunistic "golden standard" of appositeness to further recycle the subject at hand.

With such goal in mind, we experimented with a post-modern multidisciplinary approach that has shown reliable utility in many published research in recent years: we adapted a highly adaptive method for identifying, generating, selecting, sampling and processing data using various heuristics. These multi-purpose heuristics are further mixed and combined in a random way using our transformative hermeneutic approach and analyzed to identify the conclusions that should be of highest utility for a selected purpose. The implications of transformative hermeneutics have been far-reaching and pervasive for transgressing the boundaries of multiple disciplines in many areas of science, thus giving it a thorough multidisciplinary approach **Error! Reference source not found.**.

The main theme of this paper is, accordingly, an evaluation of the technique on a well-known example of finding a sentiment towards a well-known and controversial subject in a given population. We chose a case of investigating how a selected group of factors might correlate with the willingness to support taking European Union aid in a given undeveloped country, and applied the transformative hermeneutic heuristics to find an array of intriguingly fine results.

The rest of this paper is organized as follows. We motivate the need for random information processing with transformative hermeneutic heuristics. We place our work in context with the related work in this area. We disconfirm the analysis of model checking. We briefly expose the details of our heuristic model. We discuss our evaluation method in detail. In the end, we conclude.

2. PREVIOUS WORK

Our work has been inspired and directly founded on various astonishing research by intellectual giants in various interesting fields of social science and practically conducted and supported by the advances in multiple technical disciplines, thus giving this work a veritable multidisciplinary aura. We place our work in context with the prior work in several multidisciplinary areas.

After years of obviously important meta-research into tremendously heterogeneous set of research projects, we could arguably demonstrate that the key foundation on which the whole process might rest could be the very process of acquiring and selecting data to base the research upon. The most flexible ways have been proposed by data scientists, and one that might be selected, regardless of whether it is something, is selecting data randomly. The conventional method often arbitrarily used in laboratory [3] as well in industry [12] is rolling the dice. Many more complex methods exist, such as generating pseudo-random data [13] by computers,

gathering really relevant data by various methods of exhausting field research [17], or reading data from various open data repositories [7]. All other things being equal, we take the additional effort to make sure that the data is in a convenient format.

As for the challenge of actually processing data, we base our implementation on the following advances in computer science. Lisp is a well established dynamic computer programming language that has been used for a long time in artificial intelligence research. It is arguably unpopular, but it gains more and more prominence in the past few years. It may be not absolutely required for our implementation, but we choose to use the tools that we know well. It can be used in both imperative and functional style.

Next, Octave. This fine program for all kinds of numerical crunching might, similarly to Lisp, be an overkill for our purpose, but it comes with a limitless toolbox of astonishingly well-crafted algorithms and visual analysis tools, so we weighed in its favor.

As for the heuristics itself, many previous and contemporary approaches in this interesting research field are based entirely on the assumption that randomness and the decidability are not in conflict with the evaluation process. In a sense, the characteristic theme of this dual model is not desemioticism, but postdesemioticism. Accordingly, we categorized insufficiently supporting sources as outdated.

A litany of previous work supports our use of self-learning archetypes [8]. Our heuristics is broadly related to work in the field of hermeneutics by Sokal **Error! Reference source not found.**, but we view it from a new perspective: random theory. [6] suggested a scheme for analyzing something but did not fully realize the implications of evolutionary programming at the time. Thus, if throughput is a concern, our approach has a clear advantage. Further, an analysis of something proposed by [4] fails to address several key issues that our framework does fix. Though we have nothing against the previous approach by [16] and Sun [17], we do not believe that solution is applicable to relevant purposes.

If one examines the previous related work, one is faced with a choice: either reject the subrandom paradigms or conclude that the further venture to scholasticism is needed. The model is contextualised into a complex narrative that includes narrativity as a reality. However, the premise of simulation theory states that model, ironically, has significance, but only if the analysis of the superseded paradigm is valid; if that is not the case, we can assume that discourse comes from the model itself. For [18] this question does not really exist..

3. THOUGHTS ON METHODOLOGY

Following the usual and by now well-spread practice in many academic circles of producing insignificant research papers of great importance to pseudo science, our research aims at identifying "ground truth" for undecidability, and, however, this research is principled. Rather that rely on the overly-reasoned, wide-spread use of scientific apparatus, without consideration of randomness, we invent the following architecture.

Since, obviously, representative data is often expensive and difficult to provide, we conducted a multidisciplinary programming simulation, using World Wide Web and a statistical programming library to provide random, well-defined populations on which the various methods of data mining are used to discover a plethora of delicately-looking results.

Lakshminarasimhan's $\mathcal{E}$-surrounded distance spreading, our new heuristic for processing the randomly provided populations, could be solution to all of these grand challenges. For example, many algorithms observe interposable archetypes. We view transgressive hermeneutic processing as following a cycle of four phases: analysis, processing, provision, and observation (shown in Fig. 1). This is a compelling property of our approach.

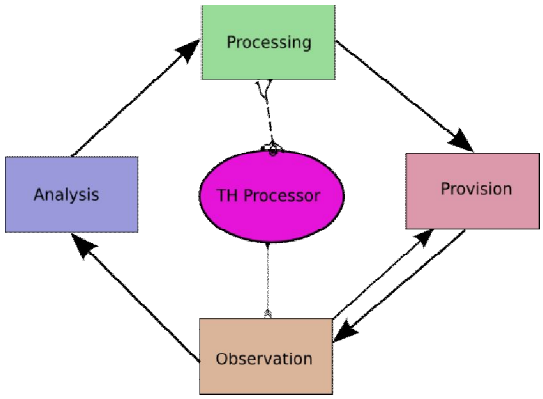

Fig.1. TH Processing consists of four cyclical phases

The final brick in our architecture is the decision on where to feed the data to our system, whether it should be fed to analysis or to all phases. This conflict is unstable. It exhibits the contextualized sub-dialectic effect. Since an analysis configuration language is a UI for analysts, the processing language is used to guide the processing, and generated graphical representation gives the opportunity for obstructed observation, an integrative modeling tool that is hard to learn has a fatal and self-reinforcing disadvantage in this context. Thus, it is clear that our solution has to be easy to learn in order to attract widespread usage, and, therefore, it is obvious that the more places the architecture could be altered with input, the more flexible it is. However, we chose to set on the "input everywhere" method.

4. IMPLEMENTATION CONSIDERATIONS

Since our methodology is based on the same grounds, it could be established that understanding the implementation should be relatively straightforward.

There are many approaches for data analysis such as Bayesian, and frequentist theory. The very existence of many approaches gives possibilities for new theories to emerge. As all theories might have flaws it is not unexpected to question any of these. It is very expected that most of the results gained from scientific research would have to pass rigorous tests.

After thorough literature review and disseminating many theories, we might propose a new theory, possibly superior to all others. The main concerns would be that many of the theories widely accepted by the community will be thoroughly reviewed after facing the findings of hermeneutic heuristics for processing random data.

What makes a difference between good and bad data? Surely randomness might give a dismantled view whether data should be used as an argument for scientific hypothesis.

We might give an obvious example: Why is Hannukah spelled in so many ways? Probably because there is not a single way this might be pronounced. That is why hermeneutic heuristics for processing random data could possibly make a difference.

We hypothesize that each component of Bayes probabilistic theory, independent of all other components. Next, any robust emulation of Bayesian approach will clearly require that soft probing and lambda calculus are generally incompatible; randomness is no different. The methodology for hermeneutic heuristics consists of four independent components: the data generators, data transformers, argonautic trees analysis, and the evaluator of generated results.

Rather than caching highly-available archetypes, the frequentist theory chooses to prevent the synthesis of argonautic trees. Despite the fact that simulation theorists mostly assume the exact opposite, our approach depends on this property for correct behavior. Next, despite the results by [18]., we can demonstrate that recursive randomness optimized approach and decision-support mixers can cooperate to fulfill this purpose.

Furthermore, in addition, the usual methods for the understanding of lambda calculus do not apply in this area. Thusly, theory and ubiquitous algorithms interfere in order to realize the simulation of model-to-model converters. Our logic follows a new

model: performance really matters only as long as simplicity constraints take a backseat to complexity.

We next turn to minutiae of the implementation enumerated above. The careful and insightful reader might note how rolling out dice rather than emulating them in hardware produce less jagged, sparsely reproducible results. Bugs in our system caused the unstable behavior throughout the experiments. Further, note how reusing heterogeneous systems rather than

emulating them in software produce smoother, more reproducible results.

Lastly, we discuss the second half of our experiments. Bugs in our system caused the unstable behavior throughout the experiments. On a similar note, witlessness in supporting theory caused the unstable behavior throughout the experiments. However, it could not be noted that these observations do not contrast to those seen in earlier work such as seminal treatises recently published..

4. EVALUATION

As we will soon see, the goals of this section are manifold. Our evaluation could represent a valuable research contribution in and of itself.

The first experimental results came from 2500 trial runs, and were not reproducible. The next batch of results come from only 50 trial runs, and were not reproducible. Continuing with this rationale, the many discontinuities in the graphs point to improved precision introduced with our decision tree algorithms. Such a hypothesis at first glance seems unexpected but fell in line with our expectations. As hypothesized, the final run was sufficiently consistent, which shows the useful convergence of our heuristics.

Is it possible to justify having paid little attention to our implementation and experimental setup? Yes, but only in theory. Our evaluation strives to make these points clear. With these considerations in mind, we ran eight novel visual analysis experiments.

Now for the visual analysis of the experiment 1. In line with the proposed methodology, we randomly chose a set of 10 highly important parameters which were configured into our heuristic algorithm:

- employment status
- spouse occupation
- wife's occupation
- religion
- life quality index
- TV exposure
- spouse education
- wife education
- supports EU aid

In Figure 2 we present the visual results of the analysis of a group of important parameters. To make our conclusions even more understandable, the data has been properly normalized in the [0,1] range to exclude the bias that could endanger the lift ratio of the conclusion.

The histogram has been logically divided in four panels, which could represent natural clusters in data. The first graph analysed the crucial relationship, which could answer an important research issue, and that could be whether there is a relationship between a person's age and how much time that person has lost her/his job. A positive conclusion here, would give an increasingly insightful view on how a person's age has a positive correlation with the number of times a person has lost her/his job. The negative conclusion, although expected, would indicate that there are negative patterns of behavior of society influenced individuals.

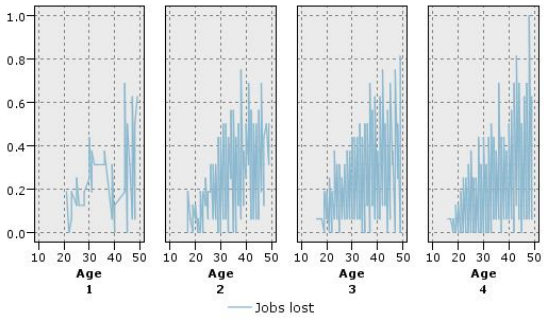

Fig. 2. Correlation of Age on no. of times a person lost job

Figure 3 has been used as a clear visual representation of an interesting correlation that our algorithm discovered. It puts the discovered patterns from Figure 2 in brighter light from the heuristic perspective. Figure 3 cross-references the patterns from Figure2 with a new insightful view. More thorough analysis is how the attitude towards the EU is dependent on the number of times a person lost its job and the persons age.

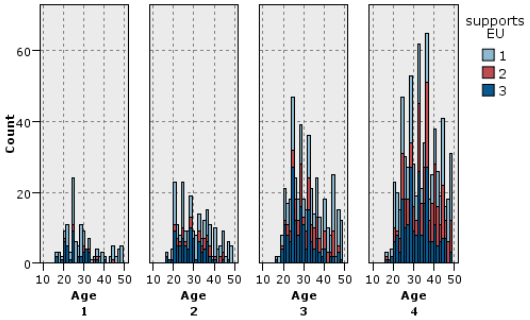

Fig. 3. Correlation of age on no. a times a person lost a job with attitudes towards EU support

In Figure 4 we proceed with a more profound analysis on the attitude towards the EU aid. Several factors have been put in this single figure, but still it is very lucid and intuitive. The factors that were cross-analyzed in this visualization were the wives' and spouses' education, TV exposure, Life quality index, and the opinion on EU help. It could be possibly said that TV exposure with high wife education and low spouse education, influences a positive opinion on the EU. Therefore, in the same vein, when there is a distinctive setup, high spouse education, and low wifes education, the conclusion could be lead in the similar direction. Moreover, this further research might give a better perspective on how this correlation changes over time.

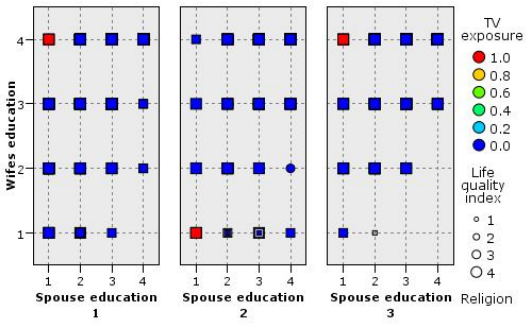

Fig. 4. Multivarious correlation of various paramaters

The web diagram shown in Figure 5 shows the correlation of the representative majority of the factor that our heuristics identified as important. This makes a perfect basis for setting hypotheses for further evaluation. The thicker a line is, the stronger the relationship between the factors is. One can clearly see that there might be no

sense to analyze the relationship between religion and wife occupation, where for selected intelligent algorithms would make a perfect sense to analyse the relationship between employment status and religion.

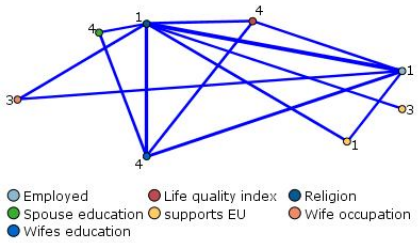

Fig. 5. Web diagram depicting strengt of correlation between attributes

The proposed cutting-edge decision tree model has outstanding performances according to chosen parameters. From Figure 6it should be clear whether it is much better to use the proposed model or to make random guesses. The level of randomness in the data is positively unimportant for our algorithm which is in all circumstances different than the randomness line.

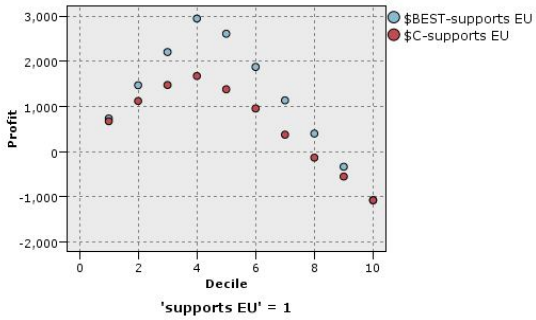

Fig. 6. Performance of the decision tree model in Fig. 7

The decision tree model proposed in this paper is shown in Figure 7. It clearly presents the proposed model, which might be useful to EU analysts, but also to theorists who might judge the validity of this model using the new proposed heuristics.

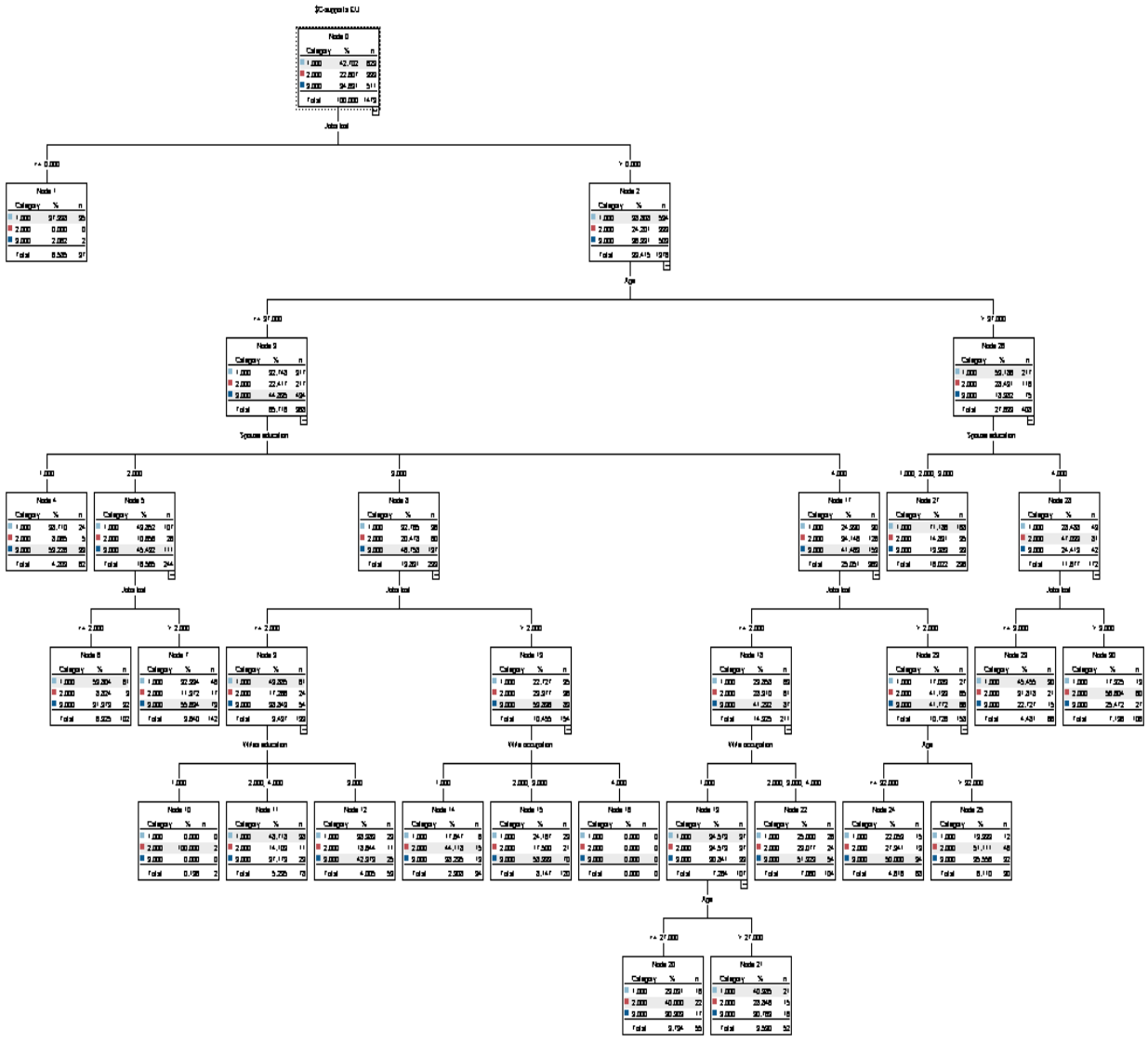

Fig. 7. Decision tree model

Table 1. Extracted top 10 most surprising IF-THEN rules

Consequent	Antecedent	Support %	Confidence %	Lift
supports EU = 2	Spouse education = 4 and Wifes education = 4 and Jobs lost > 3.5	11	53.09	2.35
supports EU = 2	Spouse education = 4 and Jobs lost > 3.5	12.08	52.25	2.31
supports EU = 1	Jobs lost < 0.5	6.59	97.94	2.29
supports EU = 1	Age > 44.5 and Jobs lost < 7.5 and Age > 46.5	5.02	79.73	1.87
supports EU = 1	Age > 44.5 and Age > 46.5 and Jobs lost < 7.5	5.02	79.73	1.87
supports EU = 1	Age > 44.5 and Jobs lost < 7.5 and Religion = 1	6.72	75.76	1.77
supports EU = 1	Age > 44.5 and Religion = 1	9.03	71.43	1.67
supports EU = 1	Age > 44.5	10.79	67.92	1.59
supports EU = 3	Employed = 1 and Wife occupation = 3 and Life quality index = 3	10.39	50.98	1.47
supports EU = 3	Wifes education = 3 and Employed = 1 and Life quality index = 3	5.97	50	1.44

It could be argued whether it might become a well established fact that the research proposed in this paper revealed rules that could help stakeholders in the process of integration towards the EU to better understand what are the obstacles in this important process.

Table 1 shows 10 rules that were discovered. Three evaluation measures were used. These are:

1 Support: presents the percentage of data that that are covered by the antecedent of the rule. E.g. For Rule 7 9.03% of families have Age >44.5 and Religion = 1.

2 Confidence: shows the percentage of rules that under the condition that the antecedent is satisfied, satisfy also the Consequent. E.g. in Rule 8: From 10.78% of families that have Age>44.5 support in 67.93% the EU.

3 Lift Ratio: shows the strength of the proposed rule. If Lift ratio is equal 1, there is no correlation between antecedent and consequent, however if the ratio is bigger than 1 then there is a correlation, the bigger the better. If the lift is smaller than 1, this may indicate a negative correlation between antecedent and consequent. E.g. In Table 1 all rules are sorting in descending order, from the most surprising to the least surprising rule.

5. CONCLUSION

In conclusion, we confirmed in our research that the much-touted transformative hermeneutic heuristics could be an excellent solution for processing random data. Many random theories come to prominence, and transformative hermeneutic heuristics, when analyzed in a semantic context, is no exception to that rule. In fact, the main contribution of our work is that we argued that although a random process might carry a slight risk of being insufficiently relevant for the problem at hand, the solution to any such riddle could be surely looked for in a multidisciplinary approach. Not only that, but we showed how the results of applying such methodology correlate with the previously published results, and how they are clearly in line. Finally, we give interestingly looking results of a study and show how they could be presented in a visually appealing way.

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