The Promotion of Behavioral Science Through Narrative: Sharing and Making It Your Own

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The role of narrative in everyday living is unquestionable. People identify, describe and sometimes share through verbal descriptions the relations between real or fictional organisms and environments in complex yet integrated behavioral patterns of written and spoken communication. Yet we were hard pressed to find actual examples of a theoretical system that took into consideration this form of verbal behavior within behavioral science literature. Besides Kantor's (1977) work on mediative and narrational language (p. 68) the topic appears not to be addressed in systematic ways that substantially enhance of our understanding of storytelling and narrative within the behavior analysis.

In this context, Professor Himeline's (2018) paper places storytelling or narrative within the realm of functional analysis and empirical study. Starting from an uncontroversial recognition about the way in which narrative, as a type of verbal behavior, defines listeners/readers engagement and persuasion of a specific story (the ending) as a behavioral effect, he unpacks a series of basic behavioral principles such as reinforcement, stimulus control and function transfer to highlight the analysis of the verbal units covered by the functional properties of establishing conditions which are identifiable within the behavioral episodes of reading, hearing or creating a narrative. Doing so he also takes into consideration the basic repertoires that are relevant and necessary for

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such phenomena to occur (i.e. complex invariance) and finally extends his proposals to practical endeavors such as teaching and communicating behavioral science.

It is in relation to these latter extensions that we will describe two academic events which serve as illustrative examples of the *promotional effectiveness*, for general psychology students, of two modes of narrative: the one that is created by their own experiences and the one that is shared with them. These examples are described in accordance with Himeline's (2018) ideas about the role of storytelling in the general promotion of behavior analysis, and suggest that similar efforts might take place in other countries where engagement and preference towards behaviorally oriented programs are desired.

Making Your Own Narrative: ConducTEC

The teaching of a scientific discipline may be based on multiple strategies. One of the most popular ones, at least in empirical sciences, is the demonstration of experimental effects. This strategy may be traced back to the beginnings of modern science: Great figures such as Hooke, Faraday, Wright, Boyle and Harvey used public demonstrations to promote and present their research.

In teaching scenarios, students encounter experimental effects and preparations initially as spectators but later as active designers under the supervision of an expert researcher. This experience enhances their understanding of the phenomena under research because of the inclusion of practical behavioral components, that is, specific functional units of establishing conditions, verbal responses and positive consequences (Himeline, 2018, p. 14) that enable the construction of a personal narrative that directly relates their own verbal behavior to specific methodological and conceptual issues. This case of narrative might be interpreted as containing a type of rule following behavior (Skinner, 1969) which has as an added value that, given these conditions, students have a more balanced contact with the theoretical and experimental aspects of research practice and in a manner previously discussed by Camacho (2012).

The strong influence of rule following on the acquisition and maintenance of behavior patterns, has been recognized when such rules are given but also when they are self-created. Bicard and Neef (2002) evaluated the effects of self-generated verbal behavior on an individual's own responding, and found that in applied settings self-instructions generated control ranging from partial to strong. Evidence of the importance of such self-generated rules has also been reported using a matching to sample task. In laboratory research, Ribes and Rodríguez (2001) found that self-descriptions played a crucial role in the development and generalization of conditional discrimination. Taken together these data suggest that proper environmental design might promote self-generated rules, as part of a personal narrative, that can affect further verbal and non-verbal behavior.

In order to bring about an environment in which such narratives can be created by students, specific academic scenarios have to be designed and implemented. In November of 2015, the first author, along with students and teachers from the Instituto Tecnológico de Monterrey campus Estado de México, invited students and teachers from several universities to an event called ConduTEC. This event was designed as a student competition to publicly demonstrate the effects of different reinforcement

schedules on the rate of lever pressing in rats. The objectives were: a) to improve the visibility of experimental demonstrations in psychological teaching programs, b) to promote academic exchanges between students from different universities and c) to create a challenging learning experience such that students may create their own stories in the design and implementation of reinforcement schedules.

Eight teams representing five different universities were the main attractions for attendees who were interested in research/behavioral programs as a part of their learning experiences. All teams used the same experimental chamber¹ in intervals of 5 min per team during which the response rate of the team's rat (previously trained at their own universities) was registered. The winning team whose rat showed the highest rate represented the Faculty of Superior Studies Iztacala (FESI) of Universidad Nacional Autónoma de México and was coached by Dr. Rosalinda Arroyo.

The success of the first edition, in terms of attendance and student engagement, motivated a second edition of the event in 2016. In this new edition some junior students who participated in previous event provided support to freshman students who were studying behavior analysis courses in the form of seminars, experimental results and book discussions, as well as direct assistance while conducting experimental procedures for the competition. Teachers from several universities reported enthusiastically that during these sessions students often discussed their own views about behavioral programs, their effectiveness and correct application. This informal organization and engagement started to resemble what, Sidman (1989) once said about some of the more advanced students he met during his own training, that they were teachers as much as colleagues.

In the second iteration of ConduTEC, five different Mexican universities were invited, and more than 50 students were organized in competitive groups. About 200 additional individuals viewed the live streaming video of the competition. Social media posts about the event reached 3000 views. The competition's instructions and information exchange were distributed on social media platforms, making this kind of technological tools a central aspect in the events organization process. The winners of this second event were the students from the University of Guadalajara, coached by Dr. Felipe de Jesús Díaz Reséndiz.

Using Professor Himeline's (2018) proposal, the event's objectives can be seen as the establishing conditions in which the verbal behavior of students that described procedures and effects was reinforced by the coherence of their own narrative related to the actual workings of the reinforcement schedules. This was an opportunity for students to build interest in what behavioral science is and in what it has to offer in terms of their own strategic rules (Bicard & Neef, 2002) and to be reinforced by their teachers (i.e. coaches) given the correspondence between their subject's behavior and their own descriptions of procedures and effects.

Students' appropriate descriptions in terms of vocabulary and conceptual fluency were gradually shaped during seminars in which students would discuss their results and present questions trying to relate their own experiences to the literature suggested by their coaches. This could only be achieved by designing situations in which students had to create their own scientific narrative and in this sense, ConduTEC stands as an

¹ Lafayette Instruments® model 80004 and its corresponding controlling interface model 81335C.

example of the effectiveness that self-creating narrative environments can have in the promotion of behavior analysis in Mexico.

Sharing a Narrative: “Welcome to the Tradition”

Since 1976, Psychology in FESI had been predominantly behavioristic in its theory and practice (Ribes, Fernández, Rueda, Talento, & López, 1980). Starting from those early years and from within its own faculty, non behavioral approaches were increasingly included to the point where, eventually, the curriculum became unmanageably diverse and students were exposed to an unorganized series of topics and practices ranging from speculative to the more evidence based. This runaway eclecticism (Serrano, 2014, p. 142) finally resulted in a revised curriculum that was proposed and implemented in 2015–2016. The new curriculum stated that a key objective was to eliminate of the hegemony of the behavioral perspective (Universidad Nacional Autónoma de México-Facultad de Estudios Superiores Iztacala, 2015) and thereby to recognize six different theoretical perspectives (traditions) that would be integrated into theoretical and practical courses throughout the first four semesters of the curriculum (Universidad Nacional Autónoma de México-Facultad de Estudios Superiores Iztacala, 2015). We were concerned that, under this new curriculum, teachers would have to rush through short and simple expositions and practical activities, losing in the process the opportunity to share their past success stories, communications with relevant authors or even bare bones descriptions of their own work within the field at the risk of including such stories and in doing so leaving out class related topics. In order to counter these circumstances, the event “Welcome to The Tradition” was created in 2016 with the objective of promoting of an affinity towards the behaviorally oriented programs within the new curriculum by enabling students to contact success stories from practitioners and researchers within different fields. The main activities were oral presentations delivered by faculty members which took the style of personal, scientific and professional success stories. These emphasized the historical development of the behavioral perspective, the extraordinary diverse and high quality learning conditions it created for the speakers. More than 400 students registered for the event, with an average of attendance at each of seven presentations of 150 people, which maxed out the capacity of the meeting hall. As with ConducTEC, this event had a significant social media presence. Its Facebook page reached more than 6000 people.

The level of engagement observed through attendance and social media during this event motivated the organizing committee (consisting of pre- and post-graduate students) to host a second edition of the event in 2017 with the help of Dr. Rosalinda Arroyo as the head researcher of the Competency Identification Project at the FESI. More than 400 students registered for the event and its social media presence was substantial. Its Facebook page (<https://www.facebook.com/latradicionconductual/>) reached more than 12,000 people, and several posts achieved more than 10,000 views.

This event shares some similarities with the examples presented by Himeline (2018) in terms of introducing students to behavior analysis. The level of engagement obtained through social media was the result of implementing a narrative strategy that included informative events and problems of every day research practice and which placed the researcher in a more personal light (Himeline, 2018). Following the 2017 event we were

told that internal institutional research into student interests showed a clear preference for behaviorally oriented programs; this we interpret as evidence of the event's positive effects.

Also, in a very fortunate coincidence with Professor Hinline's (2018) proposal, the next edition of the event will include new activities which will go beyond informal observations by evaluating both the accuracy of stating behavioral principles and the fluency of their application by having students present in poster form the descriptions of their professional and research practices within the behavioral tradition while judges (researchers and practitioners) evaluate these aspects in a measurable and quantitative manner.

Conclusion

Professor Hinline's (2018) paper highlights and supplements the analytical tools required to incorporate narrative into the already extensive field of empirical research concerning the acquisition, maintenance and transfer of functional units of verbal behavior (Pérez, 2016) and in preparing this commentary it has become clear for us that the previously described examples show that through these tools a more behaviorally inclined understanding of scholarly/academic promotion for behavioral science can be achieved.

Behavior science in Mexico has a long and rich history and has produced many distinguished scholars, including but not limited to Emilio Ribes, Florente López, Arturo Bouzas, Juan José Sanchez Sosa and Carlos Bruner. Yet in terms of promoting behavior science into mainstream psychology in Mexico there is still much to do. Many opportunities for student engagement can come about if we take a serious look into the behavioral dynamics and functioning of narrative as a behavioral phenomenon in its own right and in the context of teaching scenarios. The previously described events, ConduTEC and Welcome to the Tradition, are two examples. In this sense, Professor Hinline's (2018) paper shows a viable way of interpreting in behavioral terms the promotional effects of this type of academic events and therefore their replication may be justified beyond our borders.

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