

Editorial ¹

As stated by the first guideline of this journal, from its insertion Conductual publishes original theoretical analyses as well as basic and applied research in the framework of interbehaviorism and behavior analysis. Theoretical pieces may be focused on the philosophy of behavior science or other aspects of behavior theory pertinent to the specific research fields. Based on such editorial principles, the work that is accepted for publication is vetted by the reviewers and scientific committee to be consistent with a behavioral framework.

We have recently published translational research which by its interdisciplinary nature seeks to identify and make available novel associations with other areas of scientific knowledge. We have, thus, included a translational research article in this issue. As you may note, in this case the relationship with behavior analysis is tenuous, but the paper opens the possibility that behavior analysis might be linked to nontraditional fields of knowledge, which may be of interest to many students of behavior.

This issue comprises five articles. In the first, Aaron Blaisdell, Alexandra Stolyarova, and David Stahlman propose a Law of Expect related to behavior variability. Along with a conceptual analysis of the laws of Effect and Expect, the paper provides vast empirical evidence to support their claim that the variability of learned behaviors is modulated by expectancy of the outcome or consequence for an action. In general, the Law of Expect states that “outcome expectation is a determinant of response variation, with variation increasing or decreasing with a decrease or increase in outcome expectation, respectively”; that is, the greater the expectancy, the smaller the variability, and vice versa.

The authors provide experimental evidence of behavioral variability being a function of changes in the expected outcome in a number of experimental conditions (operant and respondent), on different species (rats and pigeons), and in both the temporal and special dimensions. Among the conditions associated with higher variability are the extinction of a previously reinforced behavior, the presence of a signal associated with low probability of reward, long delay to the reward, and smaller reward magnitude.

The evidence shows that the Law of Expect also applies to experimental situations involving spatial orientation such as when rats need to find food in a specific location in an open field. When the environmental signals indicate smaller rewards, the rats explore for longer periods and with higher variability before reaching the goal.

The authors conclude that any manipulation that alters the expected outcome of an action will affect the corresponding behavior. While the Law of Effect refers to the strengthening or weakening the stimulus-response association depending on whether the response is reinforced or not, the Law of Expect refers to the association between stimulus and outcome of a response where the expectancy of the outcome (reinforcer) will increase or decrease response variability. Therefore, both laws appear to play a fundamental role in learning.

In turn Noel Smith takes on the debate between determinism and free will. First he analyzes different versions of both concepts showing that a form of determinism is incompatible with free will. Alternatively, soft determinism states that behavior is free to occur but is influenced by biology. Causal determinism, also known as nomologic or physical determinism, postulates that nature follows a predetermined course where all events are produced by antecedent events. There is also theological determinism where humans have no part in determining their future as everything is pre-determined by their creator. Another version is exemplified by Brownian movement where nature exists at different

¹ The reference to this article in the web page is: <http://conductual.com/content/editorial-vol-4-n-2?language=en>

levels, and events may be deterministic at one level and not in another. For psychology, the most important deterministic hypotheses derive from behavioral as well as cultural or social determinism. The former, recognizing environmental influences, assumes that neurons, hormones, and genes affect behavior.

The oldest perspective on free will refers to the capacity of organisms, which in humans are volitional acts. For the most part, versions of the free will hypothesis have countered the versions of determinism outlined above. Some deny determinism, some consider it to be parallel to free will, others deem it incompatible, while still others accept it as real but incompatible. Determinism assumes a cause and an effect, free will assumes internal determinants, and interbehaviorism considers causes as multiplex of observable events where no single one is more important than the others.

Smith critically addresses the versions of free will most salient in psychology, along with studies on belief and non-belief, and the control of impulsivity, and proposes the concept of multiplex field which in some cases includes only the process of choice; that is, a functional versus a prescriptive account. He argues that the debate between the two concepts is pointless given that it invokes metaphysical forces imposed on events and then mistakenly takes one for the other.

The organocentric view of traditional psychotherapy assumes that the organism can be changed apart from the rest of the psychological field. The interbehavioral view, on the other hand, suggests that the most effective therapies are those that work with the home, the community, the workplace, and the individual. The same line of thought applies to social and legal responsibility.

The article offered by Luis Alfaro and Florente López describes an experimental study in which adolescents and adults are compared in terms of performance on a temporal discrimination task. The authors suggest that some of the differences that have been reported in the literature regarding accuracy in temporal judgement tasks may be due to the nature of the specific task used since, in addition to the temporal aspects, the tasks involve other elements such as attention and work memory. Accordingly, the authors developed a task in which participants are asked to anticipate the location from which a virtual soccer player strikes a penalty shot. Five different locations of the shot were associated with five stimulus durations. Indeed, their results show a difference in duration between adolescent and adult participants. This result differs from those obtained with the temporal bisection task, where the attention and work memory loads are lower. The authors conclude that the differences in precision of temporal judgements can be accounted for by the different levels of attention and work memory demands imposed by the tasks.

Salwa Belaqziz, Michel Le Page, Carlos F. Aparicio, Mohamed Hakim Kharrou, Saïd Khabba, Aziz El Fazziki, Paul Hennigan, and Lionel Jarlan contribute a translational study in which the goal is to incorporate the principles of behavior analysis to the process of negotiation for distribution of hydraulic resources in semiarid lands. The authors carried out a computer simulation with multiple agents in which decisions are based on the interaction of six agents: the supervisor who distributes water among the farmers, the farmer who develops cropping plans and negotiates with the supervisor the amount of water that is required, the scheduler agent who defines the plan for irrigation rounds producing efficient plans to maximize water resource management, the operator agent who tracks the adequate implementation of the irrigation calendar that the supervisor transmitted, the main canal agent who opens the canal according to the flow that the supervisor requests, and the farmer's graphical interface that interrelates with each farmer agent. The paper describes the negotiation process, where the decisions made have simulated consequences leading to optimal use of the resource. The authors conclude that, in negotiation processes based on multiple agent systems, behavior analysis can contribute its principles to the understanding of

behavior in socially relevant natural settings such as water negotiations in arid lands, while supporting the use of simulation and computational models as tools for applied behavior analysis.

The final article is presented by Edgar Rocha Hernández, Héctor Octavio Silva Victoria, Valeria Yazmin Serrano de la Cruz, Luis Galindo Rodríguez, Andrés Francisco Vargas Ávila, and Ricardo Galguera Rosales who offer an experimental study of the transference of scientific terms between linguistic modalities in college students. Because the assessment of learned material is frequently done in a linguistic mode other than the one used in teaching (listening, speaking, hearing), this research looks at the effects of transference in relation to changes in the stimulus itself as well as the linguistic modality between learning and assessment.

The participants were randomly assigned to four groups and tested on computers running a program written in Visual Basic, with access to the keyboard, microphone and headphones. The stimulus sets on a second order matching to sample task were based on synonymy, similarity, and inclusiveness. During the initial phase-training-transference test procedure, the groups had textual (T) and auditory (A) tasks, which lead to four different conditions: TTT, TAT, ATA, and AAA. The sessions had no duration limit and took place over three consecutive days. The tests had 30 trials, and the training 21 trials with feedback and correction. The performance was better when the transference test was in textual modality, either within (TTT) or between modalities (TAT) with the training, compared to when the test was on the auditory mode (ATA, AAA) with or without change of modality. Although all groups completed the transference test in less time, those in modality T had the fastest times.

The authors highlight that the best performance occurs in text mode, and when it is within a single mode. Although there were no differences in the number of corrections needed during training, during the transference test the groups in the textual mode did better. This supports the argument of visual primacy, although in this study the stimuli were terms pertinent to the scientific method, which may have increased the difficulty of the task. These results invite us to reflect on the circumstances where traditional education takes place, predominantly based on lectures by the teacher.

Once again, we cordially invite those who are interested in collaborating with this journal to send your manuscripts for peer review. Finally, we want to thank our readers whom, according to Google Analytics, visit our page from approximately 170 cities in 45 countries.

August 1, 2016