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Editorial ¹

El artículo de Kenneth Jacobs, Robert Isenhower y Linda Hayes propone una discusión conceptual muy original al problema de los eventos públicos y privados en psicología. Los autores enfatizan que la aproximación del análisis de la conducta, y las consideraciones que el mismo Skinner planteó sobre los eventos privados y su posible análisis han quedado sin elucidar, tanto su origen, sus relaciones controladoras, así como su utilidad predictiva. Por ello, los autores ofrecen una alternativa de explicación a los eventos privados que, basada en la biología y en la conducta motora, constituye una guía de análisis con una perspectiva que los autores llaman multiescala. Con ello se intenta resolver una posible incongruencia en el análisis funcional de la conducta, y que en última instancia puede considerarse un pseudo-problema: la distinción entre eventos públicos y privados.

La solución desde la perspectiva multiescala radica precisamente en analizar lo que ha sido llamado 'eventos privados' en múltiples escalas de análisis; lo público y lo privado son dos hechos diferentes de la misma naturaleza, pero vistas en escalas diferentes, y que erróneamente se les ha denominado bajo las categorías de 'accesible' o 'inaccesible'.

Como ejemplos que evidencian el pseudo-problema entre público y privado, mencionan diversos estudios sobre la percepción táctil de objetos fuera de acceso visual, que con la manipulación que se hace de ellos se demuestra que los sujetos son sensibles tanto a ellos mismos en relación con un objeto, así como al objeto en relación a ellos mismos. Con base en este tipo de fenómenos es que los humanos se tienden a describir a sí mismos y a hablar de sentimientos ante ciertos estados corporales, facilitándose la distinción público-privado.

Centrándose en los argumentos de Jacobs, Isenhower y Hayes, se publica el comentario de Andrés García-Penagos, en el que dicho autor enfatiza que comprender eventos corporales, aludiendo al concepto de tensegridad y los principios de geometría fractal, no es lo que conducirá finalmente a una dilucidación del problema de los eventos privados, dado que son principalmente conceptos hipotéticos, y se sobrevaloran los mecanismos fisiológicos. Muchos otros problemas conceptuales deben ser dilucidados antes para resolver el concepto de privacidad. La discusión que se suscita en los argumentos de García-Penagos indudablemente permite comprender la relevancia del tema de eventos públicos y privados en psicología, así como el tipo de argumentos a los que se alude para explicar problemas conceptuales en el estudio de la conducta desde perspectivas como el análisis de la conducta, el interconductismo y la psicología ecológica.

Hugo Romano Torres presenta un estudio de ajuste social y académico de parejas focales en salones de integración educativa exponiendo que estos estudios han aumentado ante las iniciativas de integración e inclusión en la educación y que en general han mostrado que los alumnos con desventajas para el aprendizaje tienen mayores problemas de ajuste social. Sin embargo, este tipo de estudios son escasos en México y eso no ha permitido reconocer la importancia formativa y los alcances de la estrategia de integración educativa. Consecuentemente se realizó un estudio bajo tres hipótesis: los alumnos con NEE tienen un nivel de rendimiento académico más bajo que los alumnos regulares; tienen menor aceptación social y menos habilidades sociales; y que la condición de aceptación o rechazo social de alumnos, con y sin NEE, será estable en el mediano plazo (seis meses). En el estudio de campo participaron 24 niños de segundo de primaria, 12 de ellos con NEE y otros 12 fueron alumnos regulares. Se emplearon en dos tiempos diferentes, el Inventario de Ejecución Académica, el Promedio General de Calificaciones, el Estatus Sociométrico, el Impacto social, Relaciones de amistad, la Aceptación Social y los

¹ La referencia de este artículo en la web es: <http://conductual.com/content/editorial-vol-4-n-1>

Criterios de ajuste y desajuste social. Después de la aplicación de dichos instrumentos se seleccionaron las 12 parejas focales que cumplían con los criterios de pertenecer al mismo salón, que estuvieran en el mismo rango percentil del PGC y que fueran de la misma edad y género.

Los resultados confirmaron que los niños con NEE tienen un aprovechamiento académico menor que el de sus pares; no existen diferencias estadísticamente significativas entre ambos grupos de sujetos focales en el estatus social, relaciones de amistad y aceptación social aunque las diferencias se hacen aparentes al contrastar a los niños focales con los estándares de los salones regulares evaluados. El perfil sociométrico se distribuyó principalmente en las categorías de “promedio”, “rechazado” e “ignorado”; la Relación de Amistad mostró que más del 40% de los niños focales no tuvieron amigos por nominación recíproca; la calificación de Aceptación Social no mostró diferencias significativas entre los dos grupos; el uso de criterios para calificar ajuste socio-académico hicieron evidente que una alta proporción de niños participantes con NEE son altamente vulnerables; y que a condición de rechazo fue muy estable implicando riesgos de integración presente y de aceptación futura en un grupo.

Los autores discuten los procedimientos sociométricos como medio para identificar la posición social ya que tienen algunas limitaciones pues las relaciones sociales se derivan de las características del medio en que viven; además no necesariamente se ajustan a condiciones estandarizadas; y difícilmente pueden verificarse por medio de procedimientos de nominación individual. Estudios ulteriores se beneficiarían con el empleo de métodos o procedimientos de sistemas observacionales o de procedimientos de sociometría conductual.

Maryed Rojas Leguizamón hace la Reseña del V Seminario Internacional sobre Comportamiento y Aplicaciones, SINCA, llevado a cabo los días 11 al 13 de noviembre de 2015 en la UNAM, sita en la ciudad de México. De igual manera, Francisco García-Torres y Francisco J. Alós realizan la Reseña del IV Congreso Internacional SAVECC de Análisis Funcional del Comportamiento efectuado del 26 al 28 de noviembre, en el mismo año en la ciudad de Córdoba, España. En los sitios siguientes puede encontrarse más información de ambos eventos:

<http://www.seminariosinca.org/v.html>

<http://www.savecc.com/cuartocongreso/>

En Conductual hemos decidido seguirle la huella a ambas reuniones académicas y difundir por este medio sus resultados, dado que sus lineamientos son muy similares a los de esta Revista, sucintamente: no persiguen fines comerciales y sólo se dedican a la difusión del conocimiento dando oportunidad de participación a jóvenes investigadores en las áreas del Análisis de la Conducta y del Interconductismo.

1 de Abril de 2016

Editorial ¹

Kenneth Jacobs, Robert Isenhower, and Linda Hayes propose an original conceptual take on the issue of public and private events in psychology. The authors point out that in Skinner's writings, and behavior analysis generally, the origin of private events, their controlling variables, and predictive utility remain to be determined. Thus, the authors offer an alternative multiscale account of private events based on biology and motor behavior. The proposal attempts to solve a possible incongruency in behavior analysis which may ultimately be a pseudo-problem: the distinction between public and private events.

From the multiscale perspective, the solution lies precisely in analyzing what has been termed "private events" on multiple scales; public and private being two different aspects of the same nature seen at different scales, which have been erroneously categorized as "accessible" or "inaccessible."

In arguing for the absence of a real distinction between public and private the authors mention studies on tactile perception of visually inaccessible objects. By manipulating visually inaccessible objects, a subject becomes aware of his hands in relation to the object, and of the object in relation to his hands. It is through this type of experiences that humans learn to describe themselves and to talk about their feelings in relation to corporal states, thus giving rise to the distinction between public and private.

Next, in response to Jacobs, Isenhower and Hayes, Andrés García-Penagos argues that attempting to understand corporal events based on the concept of tensegrity and the principles of fractal geometry is unlikely to solve the issue of private events in psychology because these are hypothetical constructs that overvalue the role of physiological mechanisms. The author asserts that many other conceptual problems must be solved before dealing with the notion of privacy. The theoretical issues that García-Penagos brings up serve to clearly illustrate the importance of the public-private events debate in psychology. Also informative is his discussion of the contribution of behavior analysis, and interbehavioral and ecological psychology to dealing with conceptual issues in the study of behavior.

Hugo Romano Torres reports a study on social and academic adjustment of focal dyads in integrated classrooms. The number of integrated classrooms has increased as a result of initiatives in favor of inclusion and integration of special and regular education. This has revealed that special needs children have more social adjustment problems. Nevertheless, this type of studies is uncommon in Mexico, which has made it difficult to realize the importance and potential benefit of an integrative education strategy. Thus, the study was guided by three hypotheses: students with special needs (NEE) show lower academic achievement than regular students; they are less socially accepted and have fewer social skills; and the degree of social acceptance and rejection of all students stabilizes within six months. Twelve elementary school special needs children participated along with 12 regular students. On two separate occasions children were assessed on an academic achievement, general grade point average, socioeconomic status, social impact, friendship relationships, social acceptance, and social adjustment criteria. After the assessments, the 12 focal dyads were matched such that both members were in the same classroom, scored at the same grade percentile, and were of the same age and gender.

The results confirmed that NEE children had a lower academic achievement than their partners; no statistically significant differences were found between the dyad members in terms of social status, friendship relationships, and social acceptance, even though some differences become apparent when the focal children were compared with regular classroom standards. The sociometric profile ranged around "average", "rejected", and "ignored." In terms of friendship relationships, 40% of the focal children did

¹ Reference to this article on the web is: <http://conductual.com/content/editorial-vol-4-n-1>

not have reciprocal nomination friends; and there were significant differences on social acceptance scores between the groups. The use of criteria to rate socio-academic adjustment revealed that a high proportion of the NEE children are extremely vulnerable, and that the level of rejection was fairly stable, which hints to risk for integration problems in the present, and group acceptance problems in the future.

The authors question the use of sociometric procedures as a way to determine social placement, given that social relations derive from characteristics of their home environment which may not conform with standardized conditions, and can hardly be verified through individual nomination procedures. Further studies may benefit from using observational methods and behavioral sociometric procedures.

Maryed Rojas Leguizamón reports on the V International Seminar on Behavior and Applications (SINCA), which took place November 11-13, 2015 at the UNAM in Mexico City. Similarly, Francisco García-Torres y Francisco J. Alós report on the IV International SAVECC Congress on Functional Analysis of Behavior that took place November 26-28, 2015 in Cordoba, Spain. Information on both events is available at:

<http://www.seminariosinca.org/v.html>

<http://www.savecc.com/cuartocongreso/>

Conductual has decided to follow the lead of both academic meetings and publish their results, given that their standards correspond with those of this journal, namely, they are non for profit organizations dedicated to spreading knowledge and providing opportunities for young investigators in behavior analysis and interbehavioral psychology.

April 1st 2016

A Multiscaled Approach to Privacy ^{1, 2}

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Abstract

There are bodily processes and events to which the behaving organism is sensitive. A self-descriptive response, taken as indicating such sensitivity, is not specific to a localized source of stimulation posturing as a private stimulus, but is specific to the coordinative efforts of the body as an integrative whole. The skin does not bound private stimuli or stimulation because stimulatory processes span the organism and environment and cut across the private-public distinction. Private events are not inaccessible; they are multiply scaled. We endeavor to characterize this scaling and lay the foundation for an empirically driven account of privacy. With the multiscaled view as our theoretical guide for inquiry, we propose a characterization of the body from nanoscale to macroscale. This characterization enlightens, as we come to find that the organism is sensitive and responsive to bodily events, processes, and states that take form under certain circumstances. Research on haptic perception and its biological bases provides an example according to which the historically deemed private event can be brought under investigative control.

Keywords: *bodily states, dynamic touch, ecological psychology, multiscaled view, privacy, and tensegrity*

Resumen

Hay procesos y eventos corporales a los que el organismo que se comporta es sensible. La respuesta auto-descriptiva tomada como una indicación de tal sensibilidad no es específica a una fuente localizada de estimulación que pueda ser señalada como un estímulo privado, sino que es específica de los esfuerzos de coordinación del cuerpo como un todo integrado. La piel no delimita los estímulos privados o la estimulación ya que los procesos estimulantes abarcan al organismo y al medio ambiente y sobrepasan la distinción ‘público-privado’. Los eventos privados no son inaccesibles; son de escala múltiple. Intentamos caracterizar este escalamiento y sentar las bases para una consideración empírica de la privacidad. Con la perspectiva de multiescala como nuestra guía teórica para la investigación, proponemos una caracterización del cuerpo de una nano escala a una macro escala. Esta caracterización ilumina, en la medida en que encontramos que el organismo es sensible y responsivo a los eventos, procesos y estados corporales que ocurren bajo ciertas circunstancias. La investigación sobre la percepción háptica y sus bases biológicas proporciona un ejemplo según el cual el históricamente considerado evento privado puede ser traído bajo control en la investigación.

¹ Reference to this article on the web is: <http://conductual.com/content/multiscaled-approach-privacy>

² A reply to this article by Andrés García-Penagos can be found on this reference: <http://conductual.com/content/psychology-not-science-organism-and-physiology-will-not-solve-problem-privacy>. Jacobs, Isenbower, and Hayes declined the opportunity to reply to Reviewer A's (i.e., Andrés García-Penagos) response.

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Palabras clave: *estados corporales, sensibilidad al tacto, psicología ecológica, perspectiva multiescala, privacidad y tensesgridad*

A science of behavior must consider the place of private stimuli as physical things, and in doing so it provides an alternative account of mental life.

—Skinner, *About Behaviorism*

Privy to you, and only you, is a phenomenal experience. Despite the development of technologies that probe, prod, and extend our investigative reach, we have been unable to capture that experience. As such, sensings and imaginings are a presumed subjectivity yet to be conquered; a subjectivity ripe for the Cartesian construal that humans are unlike animals. That last stronghold of a bastion, or last line of defense for the mentalistic philosopher and cognitive psychologist alike, is the *skin* and the supposed residings within it (Bentley, 1941). Behavior analysts characterize these residings—sensings, imaginings, percepts, and feelings—on the basis of their *privacy*, and hence their *inaccessibility*.

Skinner (1945) provided a means by which one can analyze behavior in relation to private events, but he did not succeed in fully specifying those private events. He considered private stimuli to be physical in nature, while posing a resounding question: “What is inside the skin and how do we know about it” (Skinner, 1974, p. 233)? Rather than attempting to specify the physical goings on within the organism’s body, Skinner asked: Under what *conditions* does a person *say*, “I feel” or “It hurts”? Answering such a question is telling of why an organism might emit a particular response, but it is not telling of the actual goings on within the skin. While a bruised leg and hand-to-jaw are markers useful to our inferring private events, they do not make for a comprehensive account of behavior and its controlling relations. If what is felt or introspectively observed *is* the observer’s own body (Skinner, 1974), then the body is deserving of specification.

Over seventy years gone and Skinner’s (1945) anti-mentalistic contentions have yet to foster a coherent system within which to analyze and interpret private events (Fryling & Hayes, 2015). Skinner (1945) founded some of the most basic assumptions pertinent to a radical behavioral account of mental life, but no theoretical guide for future inquiry was, nor has been, framed for an empirically driven account of privacy (see Dennett, 1984). Behavior analysts can infer that private feelings are subject to modification and specific to an organism’s surrounds, but have yet to fully understand the origins, controlling relations, and predictive utility of private events across contexts and beyond individual instances. Pragmatically, behavior analysts are effective in their endeavors to change behavior—as any behavioral therapist would attest—but that behavior analysts can change behavior does not mean they understand it and its operative mechanisms (Marr, 2009).

Owing much to Skinner’s (1945) discussion of private events we offer an alternative, while still anti-mentalistic, account of events occurring within the skin. It is an account grounded in biology and research on motor behavior (Rosenbaum, 2005) with an eye towards the environment (see Oyama, Griffiths, & Gray, 2001 for an appreciation of niches and their construction). With this grounding we provide a conceptualization of the body consistent with the basic assumption that we are dealing with a whole behaving organism (Skinner, 1956). We propose that a multiscaled view, as a conceptual guide for inquiry, paves the way for an empirically driven account of private events. The aims of this view are neither organism-based (Mendelian-based) nor environment-based (Darwinian-based), for it is our attempt to characterize organismic, environmental, and behavioral variables as they coalesce on differing yet equally important spatiotemporal scales of analysis (Field & Hineline, 2008; Hineline, 1990; Lewontin,

1983). By discerning exactly what behavior analysts are referring to when speaking of private events and by explicating the tenets of the multiscaled view, we attempt to foster a systematic approach to the investigation of that which has traditionally been deemed private (by radical behaviorists) or mental (by cognitivists).

Does the Privacy Notion Present a Problem?

When Skinner (1945) stated, “my toothache is just as physical as my typewriter” (p. 552), he asserted that private events are *not* functionally different than public events. Thus, private and public are distinguishable along a single physical dimension instead of a mental-physical dimension (Hackenberg, 1988). This was an ingenious way of dispensing with the mentalistic, but left behavior analysts with the remnants of a dichotomy. That is, *no* phenomena can be accessible while inaccessible. If an event is public, it is not necessarily inaccessible, but if an event is private, it is necessarily inaccessible. As such, the dimensions according to which we deem something private or public are mutually exclusive. Skinner implied such a dichotomy when referring to “a small but important private world of stimuli” (Skinner, 1945, p. 548), “the world within the skin” (Skinner, 1974, p. 20), and “the line between public and private” (Skinner, 1953, p. 282). Dichotomies pose both ontological and epistemological problems for coherent and parsimonious theoretical accounts of behavior. They can also stifle progress in areas of scientific investigation. For example, the remnants of Descartes’ dichotomy between mind and body are still apparent in cognitivist formulations that rely on mental representations for understanding behavior.

Thompson (2007) pointed out the problematic nature of the private versus. public distinction when he stated, “These distinctions are contrary to the epistemology of a functional analysis of behavior, which attempts to identify the *functions of variables in relation to observable behavior*, not their physical locus or ease of accessibility to public scrutiny” (p. 423). In other words, preordaining variables on the basis of physical locus and accessibility is incongruent with the science of behavior’s characterization of organism-environment relations via investigative operations (Hineline, 1984). Preordained variables are variables decided on or determined before investigation. The researcher’s course of action is also decided on beforehand, or at the very least is restricted. Therefore, preordaining variables prior to investigation is not only incongruent with the epistemology of functional analyses but also incongruent with Skinner’s operationism. Skinner’s toothache was just as physical as his typewriter, but inaccessibility alone should not impede analysis (see Schnaitter, 1978 on interpretation as an alternative to analysis).

Analysis impeded by physical locus is a problem of grammatical rather than investigative operation. Privacy is a *prescriptive description* which asserts the precluding notion of inaccessibility onto phenomena. Solving the presumed problem of inaccessibility, then, is an attempt at solving a false problem. The problem is not with the nature of phenomena as either inaccessible or accessible, but with our descriptions that impose a restrictive dichotomy upon them. Again, no phenomenon can be accessible while inaccessible, so no measure of an event privy to an organism can be taken or inferred. Privacy as a precluding notion is supported by the observation that “the literature on private events since Skinner’s time amounts to a reiteration of Skinner’s contentions concerning them, including the insurmountable problem of their inaccessibility to observers” (Hayes & Fryling, 2009, p. 44). In alignment with Hayes and Fryling (2009), we take this “insurmountable problem”—the attempt at solving a false problem—to be a pseudo-problem.

Minimizing and eventually obviating the pseudo-problem of the private-public distinction will require an observational language that encompasses rather than precludes analysis on the basis of inaccessibility. In our view, this new observational language must dispense with the pseudo-problem of privacy and admit, for the sake of progress in the natural sciences, that nothing is, in principle,

inaccessible. Therefore, events typically deemed inaccessible are events observable at scales amenable to recently developed methodologies and technologies (Thompson, 2007). Events are not private, but are multiple in scale. Figure 1 helps exemplify this point, as you can never see the opposing protrusions of a Necker cube at once. Face *a* protrudes in a direction different than face *b*. The different protrusions of faces *a* and *b* are observed on different occasions following different modes of action (the saccades of each eye) or investigation. Observed in this case, are “two different facts as one” (Watts, 1961, p. 88). Similarly, private and public are two different facts as one, or two different facts of the same nature. By substituting faces *a* and *b* with private and public, the illusion of the pseudo-problem of privacy becomes even more apparent. Private events might appear inaccessible, but provided a multiscaled analysis they are not. Although more difficult to assess, multiscaled phenomena are observed within a single matrix—a matrix amenable to the rigorous investigative operations of the natural sciences.

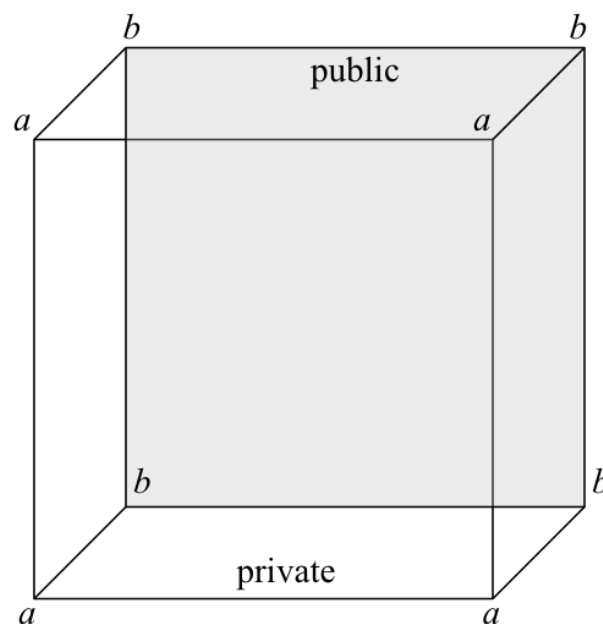


Figure 1: Three-dimensional cube portraying two different facts as one. Faces *a* and *b* present as different protrusions, but are not mutually exclusive. Similarly, private and public present as two different facts, but are one. The gray face of the cube (the *b* face) is designated as public while the *a* face of the cube is designated as private. See primary text for details.

What are Scaled Analyses?

Discussion of scaled processes and events is by no means new to behavior analysis. Himeline (1995, 2001, 2006, 2011) has proposed this very orientation, which he terms the multiscaled view. According to this view, processes—physical, biological, psychological, or cultural—occur naturally at multiply organized spatiotemporal scales. This view is prevalent among the study of physical systems, dynamical systems, and homeokinetics (Himeline, 2001; Kelso, 1995; Soodak & Iberall, 1978). As such, the multiscaled view may be exemplified by its shared affinities with field theoretic perspectives and the notion of nested processes in ecological psychology’s animal-environment system (Turvey & Shaw, 1999).

From a field theoretic perspective, multiple factors within a field are deemed mutual and reciprocal in their relations. As Kantor (1950) stated, “Causal changes or fields are functions of mutual and reciprocal changes in every aspect of a factorial system” (p. 157). In this statement, mutuality implies “sameness” whereas reciprocity implies “complementarity” (Turvey & Shaw, 1999, p. 99). Therefore, field

or event factors are mutual in the sense that they are equivalent in their participation and reciprocal in the sense that they would not exist as they are observed, one without the other. Take for example, the seeds of a eucalyptus species that germinate only when exposed to bushfire (Giffiths & Gray, 2001). The tree, seed, resinous litter, and bushfire are all factors within this field. Other factors may include wind, temperature, season, or gravity. All factors are mutual in that no factor in isolation is causal. All factors are reciprocal in that no tree distinct from a bushfire would exist as it is observed, one factor without the other. Additionally, note that almost all of these factors are occurring on multiple and varying spatiotemporal scales. No matter the duration or physical locus of such processes, whether mere units of much longer time-scale events (e.g., time of season or gravitational attraction) or processes varying in locale (e.g., small-scale activity internal to the organism), these processes are mutual and reciprocal in their relations. Ecological psychologists speak of these multiscaled processes in terms of nesting (Michaels & Carello, 1981).

Morris (2009) described the notion of nested processes within an animal-environment system when he stated:

“In this view, ‘natural processes’ are lawful at their respective levels of analysis and not reducible to processes at other levels, even as the products of the processes at one level participate in and influence those at another level, that is, sustain and constrain them” (p. 287).

In concordance with field theoretic approaches and the multiscaled view endorsed in this paper, nested processes at varying scales or levels are not reducible, one to the other, for they are mutual. These multi-level processes are also reciprocal in that they sustain and constrain one another. This is to say that lower-level activity internal or external to the organism may coordinate higher-level activity and vice versa. In Hineline’s (2006) words, “...emergent relations may both affect and be affected by what happens both at smaller and at larger scales...” (p. 226). No scale or level of process—small, large, low, high, micro, macro, molecular, or molar—is causally privileged (Hineline, 2006; Kelso, 1995). This aligns with the ecological psychologist’s operational strategy according to which “the full complement of field factors” is specified rather than being considered a mere *locus* or *thing* (e.g., private as locus; stimulus as thing, Turvey & Shaw, 1999, p. 99). This theoretical and methodological strategy emphasizes the notion of an animal-environment system in which the animal is continuous with, and therefore, not separable from the environment (Järvillehto, 1998). The animal and environment, as well as events considered private or public, are two aspects of the same system or field in which processes are nested “just as words must be understood in the context of sentences, paragraphs, chapters, books, libraries, and ... life itself” (Watts, 1966, p. 97).

In this view, the locus of privacy or inaccessibility is a pseudo-problem. The multiscaled view eschews this pseudo-problem because it treats processes as neither *discrete* instantaneous time-slices of “now” nor *discrete* in locale (Hineline, 1995, 2006; Michaels & Carello, 1981). The full complement of field factors, or multiscaled processes, is emphasized. The events nominated as private and public by radical behaviorists are what Kelso and Engström (2006) call a *complementary nature*. The question, however, is how the complementary nature of these events span the organism and environment, not as inaccessible or accessible, but as *one* regardless of physical locus.

Making Sense of Private Stimuli and Stimulation

According to Skinner (1945), a toothache is a private stimulus. What that private stimulus entails, though, is uncertain. If a private stimulus is a localized source of stimulation, it must be asked how private stimulation (restricted to receptive sites) coordinates whole organism behavior (see Gibson, 1960). Gibson

(1966) answered this question by making a useful distinction between mere stimulation—optical, mechanical, and chemical—and stimulus information. Mere stimulation occurs when a stimulus (optical, mechanical, or chemical) impinges on passive receptors. In contrast, stimulus information is a higher-order variable that coordinates whole organism behavior when it is detected. For example, the ambient optic array is the structured arrangement of light reflected from the various substantial surfaces of the environment as characterized from a single point of observation. The forward movement of an organism generates a form of stimulus information termed global optic outflow (i.e., all points of the array expand from a single point of focus at the eye-height of the organism), which specifies (i.e., is invariant across conditions) that the organism is moving forward relative to the environment. This perception-action cycle is a circularly causal system distributed over the organism and the environment. More generally, whole body action generates an invariant pattern of stimulus information that is specific to the whole body action.

In accordance with Gibson (1966), the psychophysics of receptor cell thresholds and mere stimulation do not adequately account for the behavior of the whole organism. Additionally, simply referencing that which is private as being a source of stimulation is not an adequate account of events privy to a particular organism (Tourinho, 2006). So as not to attribute the functioning of the whole to a part, we must better discern those instances of stimulation nominated as private.

Following Gibson (1966), a more modern account of stimulation acknowledges the responsive architecture of the body constituted by components of adjustment and components of reception (Turvey & Fonseca, 2014). This comprises an adjustive-receptive system. The adjustive components of this system constitute the mechanosensitive architecture of the organism (e.g., musculature, connective tissue, and the skeletal system), which alters the effectiveness of receptive sites in relation to changes in stimulation (Turvey & Fonseca, 2014). The concerted responding of the olfactory system embedded in a head attached to a mobile body provides an example. Receptive components include the nose situated in facial bones while adjustive components manifest as sniffing and breathing thanks to chest muscles (Gibson, 1966). On this account, smelling is an achievement of not only receptive components, but also adjustive components that enhance or stifle changes in stimulation originating in the environment. Stimulation, then, is equally a fact of the organism and fact of the environment. By this account, stimulation cuts across the private-public distinction, as it spans the organism and environment. This is to say that stimulation extends beyond the skin. In Järvillehto's (1998) words, "All organismic processes include processes both inside and outside the body, in the nervous system and in other necessary parts and in the environment" (p. 330).

That ecological psychology views meaningful (i.e., relevant for coordinating whole body action) stimulation (i.e., stimulus information) as spanning across organism and environment raises a question: What is the locus of the behavior analytically deemed "private stimulus" or "private stimulation"? Given what we know about the adjustive-receptive nature of the body, this question appears to not be viable. The spatially distal yet concerted responding of adjustive and receptive components undermines the notions of private stimuli and private stimulation. The chest muscles (adjustive) and nose (receptive), for instance, are not localized in the same region of the body (Turvey & Fonseca, 2014). Provided these facts, we propose that there are no private stimuli analogous to public stimuli such as a light, tone, or food in an operant chamber. This is to say that there are no private stimuli as spatially localized and temporally discrete as a light, tone, or food.

Smelling, touching, seeing, hearing, and tasting are not under the control of a private stimulus or the stimulation at receptor cell sites alone. The mechanoreceptors in the hand, for example, do not readily detect length (Chemero, 2009). Instead, it is by way of effortful touching that organisms come to detect

the length of objects via higher-order relational variables. Research on what ecological psychologists call *dynamic touch* is an exemplar of a multiscaled analysis that overcomes the pseudo-problem of privacy. Such research incorporates the full complement of field factors, as perception and action are accounted for with respect to bodily events (e.g., adjustive and receptive), stimulus object properties (e.g., the resistance of an object to being rotated: its inertial properties), and their interaction within an environment.

Dynamic Touch: Macroscale Findings for a Multiply Scaled Analysis

Dynamic touch is a perceptual subsystem of the haptic system used to detect meaningful properties of objects through wielding and hefting (Carello & Turvey, 2004; Gibson, 1966; Turvey, 1996). Object properties are detected thanks to the simultaneous contribution of adjustive components realized as muscular effort and receptive components found in the skin and joints (Gibson, 1966). Within the field of ecological psychology, dynamic touch has been one of the most successful research programs in uncovering the informational bases for perception, primarily because the candidate variables are relatively few and the physics of inertia is well understood.

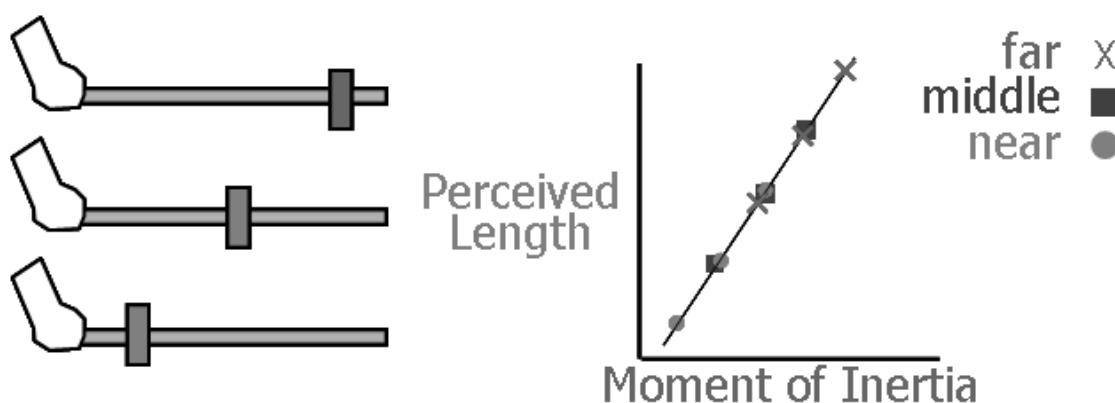


Figure 2: Left: Depiction of a person wielding a rod (out of view) with an attached cylindrical weight. Altering the position of the weight systematically changes aspects of the inertia tensor but keeps the mass of the object constant. Right: Graphical representation of the single-valued function between perceived length of a cylindrical object and the inertia tensor. Adapted with permission from Claudia Carello in personal communication to Isenhower.

Many studies using *occluded* (i.e., out of sight) hand-held objects have demonstrated that the perceived length of cylindrical objects (Solomon & Turvey, 1988), of various-shaped objects (Fitzpatrick, Carello, & Turvey, 1994), and perceived object width (Turvey, Burton, Amazeen, Butwill, & Carello, 1998), are all functions of what is called the inertia tensor. The inertia tensor quantifies the magnitudes of the resistance to rotational acceleration that occurs when wielding objects (see Turvey, 1996, for an overview the inertia tensor and dynamic touch research more generally). When a person wields an everyday object such as a pencil, a hammer, or a fork, it primarily involves rotations about the point at which the object is held. Objects can be rotated up and down, side to side, or twisted. Resistance to this rotational acceleration is predictive of verbal and nonverbal reports on length, shape, and width and is quantified by the inertia tensor. The precision of the haptic perceptual system is represented in Figure 2, a schematized version of the covariation between verbal or non-verbal object length judgments and inertial variables. On the left is a depiction of the hand-held objects that are wielded out of sight. On the right is a graphical representation of the single-valued function between perceived length of a cylindrical object

and the inertia tensor. The presence of a single-valued function indicates a one-to-one mapping between a given (length) percept and the corresponding value of the inertia tensor.

In the case of detecting and making judgments about object shape, participants hold a rod to which an object is attached at the end. Without being able to probe the object directly, participants are capable of selecting objects that match the occluded objects at the end of a given rod. The inertia tensor is stimulus information that makes this non-visual match-to-sample task possible. Not all objects, however, are easily discriminable. Burton, Turvey, and Solomon (1990) found that people can only discriminate *crude* shape through dynamic touch. Errors in shape judgments correspond to aspects of the inertia tensor that do not have a unique characterization (e.g., round and square objects).

The precision with which participants can report on length, shape, and width is not a matter of happenstance, guesswork, or covert hypothesizing. In other words, this ability is not by means of some private event. That participants can reliably report on object properties via dynamic touching is evidence that there are bodily processes and events to which the organism is sensitive. This is to say that participant behavior is not only under the control of the inertia tensor, but is also under the control of bodily events. Muscular deformation—thanks to the *action* of touching—appears to be specific to particular inertia tensors, and therefore, muscular deformation is meaningful information about object properties. Put simply, muscular deformation is discriminative for particular participant reports on certain object properties.

The focus of dynamic touch research is not the organism's phenomenal experience; but instead, its focus is whether or not bodily processes are *lawfully constrained* and specific to certain circumstances (Turvey & Fonseca, 2014). Lawful constraining refers to the reliable coordination of the body under certain circumstances (e.g., when wielding objects). In other words, lawful constraining is the case in which the many parts of the body coordinate and take on a unique pattern that is *specific to* certain circumstances. If a unique pattern is discriminable—thanks to a context or task-specific lawful constraining—it might play an important role in accounting for the self-descriptive response. Dynamic touch research provides evidence that people are sensitive to themselves relative to an object (proexteroception), and to an object relative to themselves (exproprioception). Given this evidence we hypothesize that humans self-describe and speak of “feelings” in the presence of bodily states that are lawfully constrained under certain circumstances. As such, it must be discerned how these bodily states—cutting across private and public as action oriented adjustive-receptive systems—are lawfully constrained.

From Nanoscale to Macroscale: A Multiscaled Exposition

Ecological psychologists, in their analysis of dynamic touch, have arrived at quantifiable functional relations descriptive and predictive of whole organism behavior (verbal and nonverbal) in relation to not only the environment, but also in relation to bodily processes and events. A thorough understanding of the precision of the haptic perceptual system at the whole organism-environment level has allowed ecological psychologists to assess the biological bases of these bodily processes that co-occur with behavior observed. As stated by Baum (2011), “...understanding function is propaedeutic to studying mechanism; one must know what one is trying to explain before one can explain it” (p. 186). The following is an attempt to discern and describe how these bodily processes and events are lawfully constrained in such a way that the organism is sensitive to itself. Such work exemplifies the beginnings of synthesis between the facts of the organism and behavior observed at the whole organism-environment level.

In their efforts to discern the ways in which bodily processes are lawfully constrained, Turvey and Fonseca (2014) provide us with a conception of the body derived from biological research and consistent

with behavior analytic notions of the whole organism. The body, as proposed by Turvey and Fonseca (2014), is a *multifractal tensegrity system*. Generally, this is called the tensegrity hypothesis. The term fractal denotes a physical or mathematical object that is self-similar. In other words, fractals have a sameness at each spatial or temporal level of analysis (Mandelbrot, 1983). Examples include the Koch snowflake and the Sierpinski triangle. Fractals can be characterized as having a fractal dimension that serves as an index for how the fractal pattern changes across different scales. The fractal dimension of a monofractal can be described by a single exponent, which characterizes how the fractal pattern changes across scales. Multifractals, on the other hand, are more complicated, and are characterized by a family of exponents (see Kelty-Stephen, Palatinus, Saltzman, & Dixon, 2013, for a tutorial on multifractality). Turvey and Fonseca (2014) designate the body as multifractal due to the diversity of bodily components from nanoscale to macroscale. The upshot of this characterization is that it is also a form of analysis that might capture the interdependent and bidirectional effects of the components of the body across multiple scales. Although diverse, the organizations of the many components of the body (from cell to musculature) abide by similar mechanical principles at each scale of analysis. Those principles are discerned in what is called tensegrity.

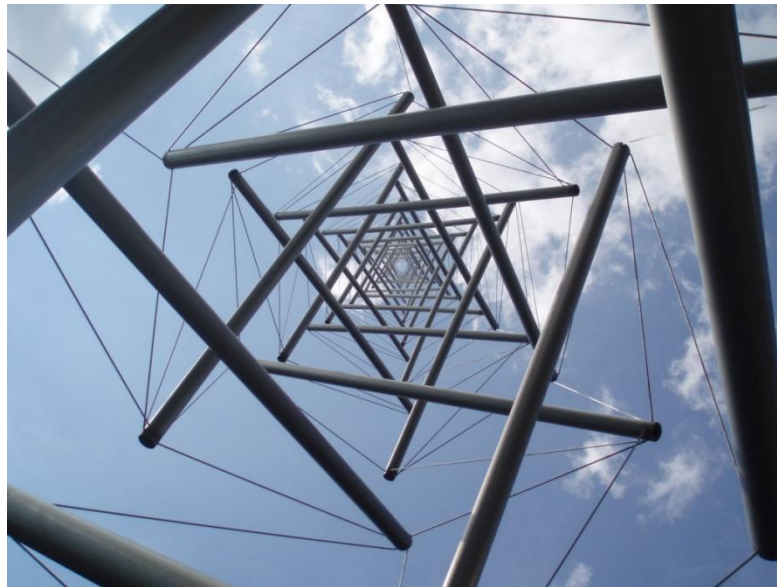


Figure 3: Snelson sculpture in which cables compress rigid-bodies, in this case rods, while the rods tension the cables. The force balance between compression and tension is such that the structure is self-stabilizing. This is the structure's equilibrium state. File labeled for reuse under the Creative Commons Attribution-Share Alike 2.5 Netherlands license. http://commons.wikimedia.org/wiki/File:Kenneth_Snelson_Needle_Tower.JPG

Tensegrity is an architectural notion that is a portmanteau of the words tension and integrity (see Skelton & de Oliveira, 2009, for a more in depth description of tensegrity and its mathematical basis). According to this notion, structures composed of rigid-bodies (e.g., compression-bearing struts) connected to tension-bearing elements (e.g., elastic cables) are self-stabilizing. Tensegrity structures are self-stabilizing in the sense that rigid-bodies compressed by cables, and cables tensioned by rigid-bodies, take a particular shape independent of external forces such as gravity. Compression-bearing rigid-bodies stretch or tense the cables while the tension-bearing cables compress the rigid-bodies (Ingber, 1998). Examples of tensegrity systems include Snelson sculptures (Figure 3) by Kenneth Snelson and Buckminster Fuller's tensegrity icosahedron (Figure 4).

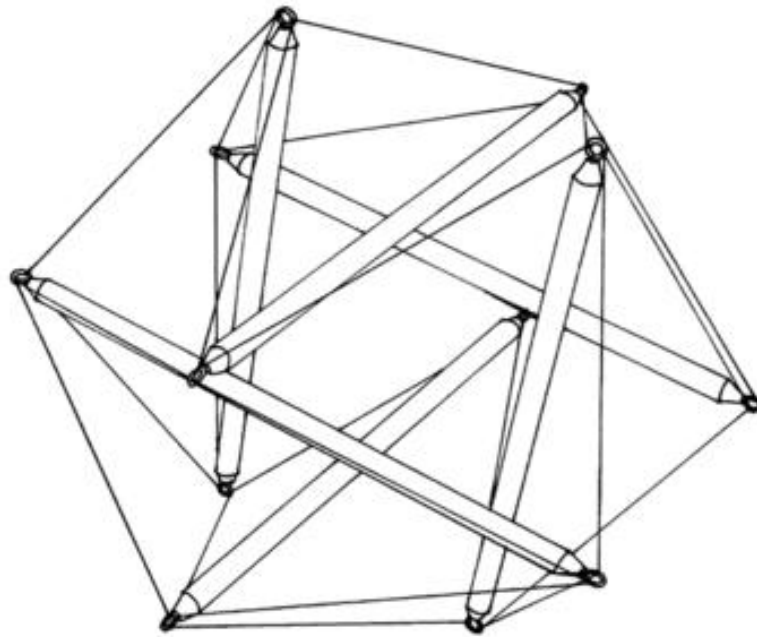


Figure 4: Tensegrity icosahedron in which cables compress rigid-bodies, in this case rods, while the rods tension the cables. The force balance between compression and tension is such that the structure is self-stabilizing. This is the structure's equilibrium state. File labeled for reuse under the Creative Commons Attribution 2.5 Generic license. http://commons.wikimedia.org/wiki/File:Tensegrity_Icosahedron.png

Figures 3 and 4 model how the body, with its many components, self-stabilizes so as to form a whole coordinated system. According to Ingber (1988), every one of our bodies is a complex tensegrity structure composed of bones, muscles, tendons, ligaments, etc. At different scales of analysis we find different structures functionally equivalent to compression-bearing struts and tension-bearing cables (Ingber, Wang, & Stamenović, 2014). Although different, as implied by multifractal, these structures are integrative in such way that we are not analyzing individual parts, but a unitary structure. In essence, we are observing many different facts as one (Figure 1).

As described by Turvey and Fonseca (2014), tensegrity is observed at scales above and below one another. This is to say that tensegrity is a *scale-invariant* characterization of the body. Scale-invariance refers to the observation that tensegrity ranges from the single cell to the whole organism, all the while maintaining its functional integrity. Tensegrity is observed at the level of cells (Ingber, 2003a; 2003b), musculature, connective tissue, and the skeletal system (MCS) in conjunction (Ingber, 1998; Ingber, 2006; Ingber et al. 2014; see Skelton & de Oliveira, 2009, on tensegrity classes related to joints and hinges), and even at the level of the brain (Turvey & Fonseca, 2014). Nested hierarchically, tensegrity systems—above, below, and within one another—sustain and constrain one another just as emergent relations can both affect and be affected at both smaller and at larger scales (Hineline, 2006; Morris, 2009). The body, then, is hierarchically organized and integrative (Ingber, 1998; Ingber, 2003a; Ingber et al., 2014). This is an example of whole *body concinnity* in line with the radical behavioral assumption that we are dealing with a whole behaving organism. Concinnity refers to the harmonious arrangement of parts and their coordinative or concerted nature (Turvey & Fonseca, 2014; see Tuller, Turvey, & Fitch, 1982, for illustrations and examples of coordinative structures). As such, local and even minute changes of a factor or factors within any one aspect of this system will result in global changes throughout the multifractal tensegrity system; that is, throughout the whole body. Not unlike a cascade, stresses at the level of the

MCS produce changes in tension and compression at size scales all the way down to the cell (Ingber, 2006).⁴

This conception of the body places all of its various elements, from the nanoscale to macroscale, on equal footing. As described by Turvey and Fonseca (2014), the upshot of such a conception is similar to the tugging of a strut or cable of a Snelson structure (Figure 3). Necessarily following from such a tug is the rearrangement of all the components that functionally define the system: “The rearrangement is a new equilibrium” (Turvey & Fonseca, 2014, p. 163). This new equilibrium occurs at the level of the cell all the way up to states observed within the MCS. Nanoscale activity, then, is on par with the rest of the body including the brain. In the words of Kantor (1950), “Causal changes in any field constitute a rearrangement in the simultaneous coexistence of factors in a unique pattern” (p. 157).

A unique pattern or new equilibrium state is the lawful constraining of bodily processes under specific circumstances. Organisms, according to dynamic touch research, come to be sensitive to these unique patterns and their relation to stimulatory changes originating in the environment. As observed in dynamic touch research, verbal and nonverbal behavior in relation to bodily events is reliably predicted and reliably controlled. A scale-invariant characterization of the body as a tensegrity system lends itself to an account in which there are not controlling things within the organism, but instead, nested tensegrity systems that make for the lawful constraining of bodily processes. In this account, notions of discrete and inert stimuli are replaced by a whole *mechanosensitive architecture* that envelops the full complements of field factors as they participate in psychological events. This conception of the body and its consequences with respect to accounting for whole organism behavior in relation to bodily processes is best described in the words of Turvey and Fonseca (2014):

To construe haptic perception as a variant of inference making, hypothesis testing, and sophisticated guessing is to view its indefinitely many veridical achievements in the course of even a single act as good fortune or happenstance. The overwhelmingly self-evident precision of haptic proprioception and exproprioception manifest within life’s ordinary circumstances suggests that the information available in the multifractal tensegrity is so specific to body states that an animal could be said to make only one inference, hypothesis, or educated guess—namely, the right one (Neisser, 1978). On this observation, putative mechanisms of inferring, hypothesizing, and guessing are superfluous (p. 168).

This statement encompasses the results of a research strategy that eschews the pseudo-problem of privacy. It provides a conception of whole organism behavior in relation to bodily events and the environment. It utilizes a conception of the body consistent with radical behaviorism and derived by way of multiscaled analyses. As a whole mechanosensitive structure, psychologists need not refer to parts alone, but to the lawfully constrained states to which the behaving organism is responsive. While the constituents of the body are important, the whole coordinated efforts of the body are most relevant to the science of behavior’s characterizing organism-environment relations at an ecological scale. Understanding the coordinative workings of the body has bearing on our understanding the self-descriptive response.

The Unbounded Skin

According to dynamic touch research, self-descriptive talk about the body is hardly limited to the three nervous systems—interoceptive, proprioceptive, and exteroceptive nominated by Skinner (1974).

⁴ Other examples include the long-range propagation of tension from the latissimus dorsi to the gluteus maximus (Carvalho et al., 2013) and the nearly simultaneous adjustments in tension at the pectoralis major thanks to distal and minute perturbations at the thumb (Marsden, Merton, & Morton, 1983). See Turvey and Fonseca (2014) for a more extensive exposition of long-range anatomical activity.

Given the body's mechanosensitive structure, ecological psychologists have expanded upon the three nervous systems with the terms exproprioception and proexteroception (Turvey & Fonseca, 2014). Exproprioception refers to perceiving the environment relative to our own body (the horizon I see is not the horizon you see), whereas proexteroception refers to perceiving our own body relative to the environment (seeing the tip of my nose is indicative of distance from here). Conceiving the body as a mechanosensitive structure makes an analysis of bodily processes in relation to the whole behaving organism and environment possible (hence, the conceiving of exproprioception and proexteroception).

We contend that events historically deemed private are not neurogenic, receptor cell specific, or brain region determinant. The efforts of the many constituent aspects of the body—cells, joints, connective tissues, and muscles—are coordinative and context-dependent (Kelso, 2009). It is not only by means of retinal cells that you see, mechanoreceptors that you feel, and stereocilia that you hear. Not even the brain can be construed as the lone corpus through which we make sense of the world, for receptors do not simply convey a world for the brain to display. In the heads of a mechanosensitive architecture, the brain is but another cog nested within a hierarchy of adjustive-receptive systems. According to Turvey and Fonseca (2014), efferent pathways—projections descending away from the brain—constitute a neural variant of an adjustive-receptive system. As conditions of stimulation change, efferent pathways (adjustive components) descending away from the somatic sensory cortex dynamically alter the effectiveness of subcortical activity (receptive components, King, 1997).

In concert with retinal cells, mechanoreceptors, stereocilia, and the brain, the mechanosensitive architecture of the body is all at once adjustive and receptive devoid of an initiating agent besides its complement—the environment. Apparent when speaking of nested adjustive-receptive structures is the lack of a “private stimulus” analogous to stimuli construed within an independent-dependent, cause-effect, and agent-action model (Hineline, 1990). From this perspective, there are no private stimuli analogous to food as a reinforcer. As a hierarchically organized and integrative adjustive-receptive tensegrity system, the body and its many components differentially coordinate with respect to certain circumstances. The coordination dynamics of the auditory system provide an example with implications pertaining to a person's self-descriptive response.

Different hair cells (receptive components) in the inner ear sense different frequencies dependent upon the tensioning of structures (adjustive components) in not only the inner ear, but the middle and outer ear as well (Ingber, 2006). The isometric tensioning of these structures—a sort of tuning—makes it such that humans are immediately responsive to a whisper or a scream.

The coordination of the ear, concerted with the rest of the body, is a unique and lawfully constrained pattern that depends upon a person's presence at a library or concert. An identification of such lawfully constrained patterns might give new meaning to Skinner's (1974) behavioral translation of self-descriptive statements concerning “feelings.” Skinner (1974) translated the statement, “I feel like playing cards” into “I feel as I often feel when about to play cards” (pp. 31-32). Statements concerning a particular sentiment are indicative of present contingencies, and therefore, potentially useful for the prediction of a person's future behavior.

We extend Skinner's (1974) interpretation by contending that statements concerning feelings are indicative of environmental contingencies *and* lawfully constrained bodily states. We propose that an identification of lawfully constrained bodily states might drive empirical investigations regarding the self-descriptive response. In accordance with this proposal, we might also fulfill Skinner's (1974) admonition that what is felt or introspectively observed is the observer's own body. The statement, “I feel like going to a concert” can be translated into empirically derived statements concerning the coordination of the whole body—from ear to cell—under circumstances related to concert-going.

Conclusion

In this paper, we have presented dynamic touch research, the tensegrity hypothesis, and research on the context-dependent coordination of the body as empirically supported analogies that provide avenues for the empirical investigation of events historically deemed private. We do not suppose that there are feelings as noun-like or static things, but we do suggest that there is a context-dependent and almost simultaneous coordination of cells, MCS, and the brain. Again, such coordination takes on a unique pattern or new equilibrium to which the organism is sensitive when perturbed. Specification of these unique patterns is a serious possibility, for tensegrity-based quantitative models descriptive and predictive of cellular behavior are currently being developed (Ingber et al., 2014). Scaling-up these models to the level of MCS is a future to which we look forward, as it will likely inform the study of what is felt or introspectively observed; that is, the observer's own body.

The empirical examples from ecological methodology presented in this paper (specifically dynamic touch and tensegrity) serve as evidence to support our claims and demonstrate a methodological path toward eliminating privacy from behavior analysis. However, we should proceed with caution. Our approach may not eliminate all events conceptualized as private, although that is our ultimate goal. Additionally, while our empirical examples may be new to many students of the science of behavior, our approach to understanding mental life is not. In fact, it is entirely in keeping with the tenets of radical behaviorism.

Skinner called for an alternative account of mental life. In his own words, "An adequate science of behavior must consider events taking place within the skin of the organism, not as physiological mediators of behavior but as part of behavior itself" (Skinner, 1963, p. 953). Lawfully constrained bodily states are not mediators bound within the skin, but are a part of behavior. Bodily events are specific to certain circumstances and adjustive (action oriented) with respect to changes in stimulation that originate in the environment. On these grounds we contend that there is nothing private and no place for private stimuli inside the skin. As we expand and contract our scale of analysis we do not come into contact with more or less parts, but instead, varying patterns of relationship (Watts, 1961).

A methodological charge for the science of behavior will be the identification of lawfully constrained bodily states meaningful to the whole behaving organism. Such a charge will almost certainly necessitate interdisciplinary collaboration, but it is in the pursuit of a more comprehensive account of behavior that we propose this challenge. Extending concepts from ecological psychology (e.g., dynamic touch, tensegrity, and stimulus information) may provide an avenue toward this goal. The multiscaled view fosters this endeavor, as its tenets of mutuality and reciprocity emphasize the commensurable and complementary nature of organism and environment.

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Psychology is Not the Science of the Organism, and Physiology Will Not Solve the Problem of Privacy: Commentary on Jacobs et al. (2016) ¹

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Abstract

Jacobs, Isenhower and Hayes (2016) advocate for the use of recent theoretical and methodological proposals in the field of ecological psychology to overcome long-standing problems in the conceptualization of private events in radical behaviorism, and in the experimental and applied analysis of behavior. They conclude that the notion of patterns of tensegrity at the level of the cell, tissue, or muscle, spreading to higher levels according to the principles of multifractal geometry allows for a better answer to the Skinnerian question “What is inside the skin?” Unfortunately, it is not in the understanding of such bodily events that the problem with privacy lies, but in the abundant conceptual difficulties it brings about, an issue that will not be solved by appealing to (mostly) hypothetical physiological mechanisms. Furthermore, Jacobs et al., overestimate the implications of such analysis for the issue of privacy, and in so doing, have failed in demonstrating how their multiscale approach provides an advantage over other approaches to privacy, particularly the Skinnerian approach.

Key words: *private events, bodily events, reductionism, eliminative materialism,*

Resumen

Jacobs, Isenhower y Hayes (2016) sugieren el uso de propuestas teóricas y metodológicas recientes en el área de la psicología ecológica para superar problemas de larga data en la conceptualización de los eventos privados en el conductismo radical, así como en el análisis experimental y aplicado del comportamiento. Concluyen que la noción de patrones de tensegridad al nivel celular, histológico o muscular que se transmiten a niveles superiores de complejidad de acuerdo con los principios de la geometría multifractal, permite dar una mejor respuesta a la pregunta formulada por Skinner respecto a “¿Qué hay dentro de la piel?” Desafortunadamente, no es en la comprensión de tales eventos corporales donde yace el problema con la privacidad, sino en las abundantes dificultades conceptuales que tal noción introduce, un problema que no será resuelto apelando a mecanismos fisiológicos en su mayor parte hipotéticos. Más aún, Jacobs y cols., sobreestiman las implicaciones de tal análisis respecto al problema de la privacidad y de tal forma no logran demostrar cómo su aproximación multiescalar ofrece ventaja alguna sobre otras perspectivas acerca de la privacidad, particularmente la Skinneriana.

Palabras clave: *eventos privados, eventos corporales, reduccionismo, materialismo eliminativo*

There is a lot in the recent state of radical behaviorism that makes one think of Sisyphus of the Greek myth. In this particular case, I think, we can blame B. F. Skinner for founding the bases of what seems to be a never-ending debate, an instance of what the ancient philosophers would call “aporia.” The

¹ Reference to this article on the web is: <http://conductual.com/content/psychology-not-science-organism-and-physiology-will-not-solve-problem-privacy>

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issue of concern is that of private events and their role in the explanation, prediction, and control of (human?) behavior, or more precisely, whether radical behaviorism, and by way of it the experimental and applied analysis of behavior, can or should ignore those events that are central to other conceptual and methodological approaches to the subject matter of psychology.

This seemingly trivial issue was given centrality in Skinner's view: "What is inside the skin, and how do we know about it? The answer is, I believe, *the heart of radical behaviorism*" (Skinner, 1974, p. 233; italics mine). By doing so, the endless struggle of behaviorists with privacy started, the tortuous attempts to define those events to only see the boulder going downhill again where someone else will start the climb again, with identical results. And here we have yet another approach to privacy that promises to deal with the problems and move in the direction of an empirical answer, a laudable goal indeed, but one that I fear is doomed to fail as have been many others before, for reasons that I will explain throughout this comment.

The main concern for Jacobs, Isenhower, and Hayes (2016) is that Skinner's views still haven't provided "a coherent system within which to analyze and interpret private events" (p. 6), a fair argument, of course, but a worthy one? That is, do we need such a system? The issue as I see it requires conceptual clarification from the start, with the simplest and maybe most important question being: What *are* private events? As I will attempt to show next, the fact that the authors are unclear about this most basic of questions is a bad omen for the success of their new (?) alternative.

The Problem of Privacy, from Skinner to Jacobs et al.

To be fair to the authors, their definition problem is not an individual malady but actually an epidemic. Skinner himself was after all ambiguous in his usage of the concept (Zuriff, 1979), including all sorts of different terms under the umbrella of privacy, from toothaches to autoclitics, to subvocal speech. That the authors haven't bothered to define to which of these, if any, does their alternative apply, introduces right from the start an ambiguity that only worsens as one reads through the piece. Are the authors referring exclusively to the control of behavior by *bodily* events? One would assume so, until one reads later that: "The precision with which participants can report on length, shape, and width is not a matter of happenstance, guesswork, or covert hypothesizing. In other words, *this ability is not by means of some private event*" (p. 12; italics added). So what are the authors actually arguing against?

Jacobs et al. argument begins with a description of what the authors see as the problem of privacy, arriving at the conclusion that it is a pseudo-problem (following probably the arguments espoused by Hayes & Fryling, 2009, which are apparently to be accepted as final conclusions). Now, there are many problems with Skinner's account (see e.g., Baum, 2011; Ribes-Iñesta, 2003), to be sure, but I have some difficulty with the reasons *why* they see privacy as problematic. Their main argument is puzzling: by proposing a distinction between public and private events, Skinner proposed a dichotomy, the "remnants" of which are still with us (p. 7). Leaving aside the issue of how a conceptual argument leaves remnants, and what those remnants are, here is the formulation of the dichotomy: "*no* phenomena can be accessible while inaccessible. If an event is public, it is not necessarily inaccessible, but if an event is private, it is necessarily inaccessible" (p. 5; italics in the original). Skinner would be surprised of knowing those are the conclusions from his papers.

Obscurely, the authors argue that "[d]ichotomies pose both ontological and epistemological problems for coherent and parsimonious theoretical accounts of behavior." This is news for me, indeed! There are some troublesome dichotomies, of course, but I can think of plenty which do not pose the dramatic ontological and epistemological problems the authors argue: the S^D-S^A dichotomy, or that of

reinforcement/punishment, or liberal/conservative or thousands of others in both technical and lay language. Maybe what the authors are afraid of is not dichotomies, but *dualism*, which is a completely different issue, and I think such confusion is unforgivable.⁴

More importantly, however, is that Jacobs et al., seem to assume that inaccessibility is the only problem in Skinner's approach to private events. This is, in fact, the lesser of its problems. Some of the events Skinner included in his taxonomy of private events are physiological events inside the skin, and these evidently are *accessible* in principle, by technological measures, even if inaccessible now, as Skinner himself would expect (and even, and uncontroversially, Baum, 2011; see also the discussion of Privacy A and B in Rachlin, 2003). In this respect, we can only agree: inaccessibility is indeed a pseudo-problem, easily circumvented by technological advances. Jacobs et al., are not alone in believing this is the only problem with Skinner's views, it seems, as many other authors (e.g., Palmer, 2009; 2011) in the aporetic debate of privacy emphasize this point over all others.

What I would call the *deep* problem of privacy has never been one of accessibility. Skinner wouldn't disagree that those physiological events are in principle accessible, and charging him with arguing for the opposite is clearly a straw-man argument. Further, it is important to point out that Skinner after all wasn't that interested in studying private events *per se*, but how they (seem to) control behavior. In his writings he showed, to the best of my knowledge, no interest in defining them or in how exactly do they manage to "control" behavior beyond calling them stimuli or responses. His interest was mostly on the issue of "intentional idioms" and their translation to functional terms, on the premise that most of them are just fictional explanations. That is, his interest was *not* in the mechanisms of private stimulation or response, but in the sort of verbal behavior that he called self-descriptive behavior.

In my opinion, a good argument can be made that Skinner was not interested in whether said private events were accessible to a researcher in a lab, but whether they're accessible to a community which will reinforce or punish the individual's behavior: "Although the private world is defined anatomically as 'within the skin,' the boundaries are the limits beyond which the reinforcing community cannot maintain effective contingencies" (Skinner, 1969, p. 230, footnote 2). In this sense, even if those events are detected by say, an optical fMRI, the verbal community might not consider this information useful insofar as the community won't be responding to the physiological event in the same way that the person experiencing it is: "The way in which I observe [private events] 'introspectively' is not the way neurologists would observe them if they could, and until they can observe them as they would like to do, their neurology will remain 'only indirectly or inferentially knowable.' I know about presumably the same events directly and without inference, though in an almost certainly limited and faulty way." (Skinner, 1988, in Catania & Harnad, 1988, p. 313).

In typical Skinnerian fashion, his arguments were ambiguous. The quotes above might be taken to mean that ultimately for him what is important is not the nature of the private event, but how self-descriptive behavior enables some sort of social coordination, an argument that seems close to Wittgenstein's famous "beetle in the box" thought experiment. But it can also be taken to imply some version of solipsism, in the sense of being events that *only I* can fully observe (know?): The dentist might see my damaged tooth and infer from my behavior that I'm in pain, but ultimately cannot *observe* my pain the way I observe it. This is where most critics find a problem with the Skinnerian position, as it seems to

⁴ It seems that the authors' problems with dichotomies come from a misunderstanding of the following quote from Hayes & Fryling (2009): "We have argued that the problem of privacy in the analysis of behavior is a pseudo-problem having its source in an *illegitimate* dichotomization of psychological events on the basis of which side of the organism's skin they are held to be taking place" (p. 54; italics added). Notice that in this quote what is seen as problematic is the illegitimate use of them, not dichotomies *per se*.

be evidence of ontological or epistemological dualistic implications that are antagonistic to the tenets of radical behaviorism (Baum, 2011; Harzem, 2000; Ribes-Inesta, 2003).

Furthermore, Skinner's incoherent use of the adjective "private," including in his definition not only physiological events inside the skin, but all sort of other events had the very unfortunate consequence that we have had countless and pointless debates on "privacy" as if all sides were discussing about the same phenomena, as if they all had the same referent. It doesn't help that Skinner often referred to these events as private stimuli and responses, again as if these were actual objects or events in the world. As they say, if all you have is a hammer, everything looks like a nail, but I digress.

Jacobs et al., have fallen prey to this very trap by suggesting that when the problem of accessibility is circumvented privacy no longer poses a problem. Their argument in this case has the following form: Since Skinner's analysis of private events applied to the events of interoception and proprioception, and ecological psychologists have proposed a better analysis of proprioception, we can conclude that their analysis applies to, and does a better job of, *all* of privacy, providing a coherent system to analyze and interpret those events. But is that really the case?

Will Dynamic Touch Solve the Problems with Privacy?

A central part of the argument of Jacobs et al., is their description of research by ecological psychologists on so-called dynamic touch. Jacobs et al., consider that this research is "an exemplar of a multiscaled analysis that overcomes the pseudo-problem of privacy" (p. 11). I certainly am unsure of how a pseudo-problem can be overcome by research instead of conceptual analysis, but again, maybe I'm just misinterpreting their terms. Maybe what they mean is that such research illustrates the point that an analysis of certain private events can be made, demonstrating the futility of the appeal to accessibility. And who would disagree? Would any serious radical behaviorist, of a Skinnerian or other persuasion, believe that there are no biological components to any instance of behavior? As Rachlin (2003) put it, "Of course there are all sorts of events going on inside my head, neural events, hormonal events, physiological events. I can even talk to myself, possibly picture things to myself and possibly introspect about those words and pictures" (p. 187).

But again, Jacobs et al. suggest that the interesting research on dynamic touch is superior insofar as it provides "evidence that there are bodily processes and events to which the organism is sensitive" (p. 12). I guess I've been going to the restroom all these years for the wrong reasons! It is news to me that we needed that evidence. And they continue to clarify it, "This is to say that participant behavior is not only under the control of the inertia tensor, but is also under the control of bodily events" (p. 12). And again, who would disagree? Do we know of *any* behavioral event which is different? That is, is there any behavioral event that is not under the simultaneous control of environmental and bodily events? Even cognitive psychologists think of representations as having a biological basis. If the authors are suggesting that Skinner thought differently they're clearly misrepresenting his views.

But, why do the authors think this research presents an advantage over previous analyses of privacy? It seems that what throws them off in such belief is that in the experiments on dynamic touch participants are blindfolded and yet are very accurate in estimating the length, shape, and width of objects and, lo and behold, those estimates are often of a verbal nature. So, should we assume that what we're seeing here is a report of the private event? Is the participant in such experiments reporting on the action of his tensegrity system or just reacting, behaving towards the mass, length and ultimately the "inertia tensor" of an object? The answer is of course that the participant's estimate is a function of both, but no *a report* of them.

Let me explain myself with a little analogy. Imagine that in a different experiment, probably the simplest of all, we ask a participant to label the color of a key that we can transilluminate. Most adult humans will excel easily at this simple task, saying “blue” (or its equivalent) to a key illuminated in the appropriate wavelength. This experiment is almost identical to those in the dynamic touch experiment, except involving color instead of shape, length and the like. Now, when the participant says “blue,” should we assume that this is a report of private event? Should we assume that the participant is reporting about the increased activity in her cones around the fovea, the activity of parvo and magno ganglion cells and about the role of the LGN in the thalamus, and the increased activity in the different areas of the primary visual cortex? Do we gain anything by calling this report a private event? How is this different from the case where a blindfolded participant describes an object that she is wielding as being L-shaped?

Interesting as this research is (and I *do* think is), and supportive as it is of the notion that perception does not require representational processes, it seems to me that this has little to say about privacy, and even less to say about the issue of self-descriptive behavior. The authors, I think, are aware of the issue as we read that: “If a unique pattern [of coordination of body parts specific to certain circumstances] is discriminable [...] it *might* play an important role in accounting for the self-descriptive response” (p. 14; italics added). This view is hardly different from that of Skinner, only that instead of talking of private stimuli and responses, we’re talking of patterns of muscular activity that are somehow specific to a circumstance. Couldn’t the orthodox Skinnerian just say that what Skinner meant by a private stimulus is such a pattern?

Jacobs et al., argue that this research provides evidence for what ecological psychologists call proexteroception and exproprioception. These two terms, however, are not hypotheses, but instances of taxonomical categorization, that is, labels or categories proposed to classify events, and as such they do not *require* evidence. What dynamic touch provides evidence for is that haptic perception is a function of the physical properties of the wielded object by way of the muscular changes and deformations produced by such wielding. How do the authors jump from this clear and straight conclusion to hypothesize that “humans self-describe and speak of ‘feelings’ in the presence of bodily states that are lawfully constrained under certain circumstances” (pp. 14-15) is beyond me.

Two questions come to me from this loose and bold assertion. First, what is self-description? Is this behavior unique to humans? Second, and most importantly, since participants’ estimates of length and others in the dynamic touch are equally controlled by bodily states that are lawfully constrained under particular circumstances, are then those estimates instances of “feelings”? Are all so-called private events feelings? And if not, how are “feelings” different from those other phenomena? And what are those bodily states? And what are the “certain circumstances”? One would imagine that the answer to these important questions would be the goal of the following sections in their paper --after all, they’re proposing a new approach to privacy--, but that is not the case, which suggests they expect the reader to accept their crude hypothesis without further consideration, and figure out the details by her or himself. The concerned reader should not fret, because in his help the authors have provided us with a discussion of how the lawful constraining of bodily events might occur, and it might only require to learn a little bit (or maybe more than that) of cell biology, functional histology, fractal geometry and biotensegrity.

Twas Brillig, ECM, MCS, MFT and the Tensegrity Icosahedron

Although the particulars about “feelings” are not described at all in the article, the authors seem to suggest that knowledge about bodily processes, or more precisely their “lawful constraining” to particular circumstances, might give a clue. It is not clear, then, whether their analysis of tensegrity and multifractality are just an exemplar of the action of bodily processes in general applicable only to issues of proprioception, or whether it underlies the action of *all* bodily processes. It is also obscure by extension

whether the authors are merely illustrating that some research can adequately address phenomena that are said to be private in an empirically rigorous manner (as I think it does) or whether the notion of multifractal tensegrity is or should be central to any treatment of so-called privacy, although they seem to favor the latter.

In considering Jacobs et al., adoption of this theoretical framework I will follow mostly the proposals of Turvey & Fonseca (2014), which seem to be the ones guiding their conceptualization. It is important to point out from the start that Turvey and Fonseca are mostly interested in a systematization of the *physiological mechanisms* underlying proprioception, and *not* in the issue of self-descriptive behavior that is central to the debate of privacy. The proposal of Turvey and Fonseca is essentially an extension of the work of Donald E. Ingber (e.g., Ingber, 2003) and others suggesting that the structures of cells, tissues, organs, and even organisms can be mathematically modeled according to the principles of tensegrity.

Turvey and Fonseca's views are also rooted in J. J. Gibson's ecological approach to perception (see Reed, 1988, for a comprehensive review). A fundamental tenet of the ecological approach is that the environment is rich in information, and as a consequence the perceiver is active in trying to extract such information from stimulation by exploring, looking, listening, tasting, smelling. In this manner, perception consists of such behavioral adjustments and does not require or imply any sort of elaboration in the form of cognitive processes. By proposing the tensegrity hypothesis, Turvey and Fonseca were trying to do for "haptic"⁵ perception what Gibson had done for visual perception.

In visual perception Gibson's approach emphasized the dynamic properties of the *optical array* as a rich source of information that can be extracted by an organism. But, what is the equivalent source of information for haptic perception, particularly when we seem to be so accurate in reaching and grasping for things, as discussed in the previous section? Turvey and Fonseca's reply was that the tensegrity-like properties of the "muscular, connective tissue, skeletal" (MCS) system might play a similar role, a "tension array" or a "deformation array" (Turvey & Fonseca, 2014, pp. 169-170), that is, that the different states of tension or distension connecting the parts of the MCS, and the changes in these states, provide information about the position of the body and its parts, and about changes in this position, and that this information is extracted by the haptic perceptual system, so that the individual behaviorally adjusts accordingly.

The novelty in Turvey and Fonseca's (2014) analysis lies in incorporating the issue of multifractality, not as Jacobs et al., argue "due to the diversity of bodily components from nanoscale to macroscale" (p. 13), but because of their ultimate interest in motor behavior. Their question is, if the information for proprioception comes ultimately from changes in the extracellular matrix (ECM) affecting the tensegrity of cells, how is it that information at the cellular level is transformed, so to speak, into motor behavior at the level of the whole organism? Unlike the reasons for adopting tensegrity as a model, coming from a large tradition in cell biology and physiology, their adoption of multifractality as the answer to this question is less clear.

The interest in fractals, multifractals and the like comes from the so-called "complexity sciences" (Kelty-Stephen & Dixon, 2012), that originated mainly in the possibility of describing and understanding turbulence as a physical phenomenon by using power-law relationships, and in the use of the related area of fractal geometry which is argued allows for a mathematical description of phenomena of increasing

⁵ Turvey & Fonseca (2014) used the adjective "haptic," to refer to nonvisual perception occurring when one holds an object for a particular goal, say a hammer, a baseball bat, or a pen.

complexification.⁶ In particular, the issue of multifractality refers to the use of a number of power-law relationships that are supposed to deal with “nested structure across multiple scales” to paraphrase Kelty-Stephen & Dixon. To Kelty-Stephen and Dixon, multifractality is a framework that enables the analysis of phenomena that seem chaotic or unpredictable, that is, turbulent, including “cognitive” phenomena, hypothesizing even that their analysis might allow understanding of representations from a physical viewpoint.

The point I want to emphasize is that whether the body is a multifractal tensegrity system or not is *not* a fact, but a *working hypothesis*, one that requires that “the body in all of its parts, at all of its scales, is constituted by the same kind of system under a common scale-independent thermodynamics” (Turvey & Fonseca, 2014, p. 152), in particular in what refers to multifractality. Their conclusion, as described by Jacobs et al., is that it is the differing deformation *patterns* of the multifractal tensegrity (that is, of the cell, tissue, muscle, and body as a whole) that provide information about particular body states. As a hypothesis, multifractal tensegrity as an accurate description of “what is inside the skin,” is ultimately an empirical matter, but as Jacobs et al., point out it puts the spotlight on the complex issue of how physiological events occurring at the cellular level might be functionally related to events at higher levels of organization. The issue of course is how this is relevant to the analysis of privacy.

I think the highlight of the argument of Jacobs et al., lies in bringing attention to the fact that the use of concepts like private stimuli or private responses to describe or characterize physiological events as related to behavior is a very bad practice. They replace these concepts, however, with another that although arguably better is just as vague, that of patterns of cascade effects in the MCS system. The point is not whether such patterns occur or not, or whether the body can reorganize –reach a new equilibrium–, as a result of a (mechanical) change in the tensegrity at either the ECM, cell, tissue, or muscle level. It well might, for all we know. The point is that ultimately some of these events can be “reported” and some others cannot.

The question is, then, if indeed organisms “come to be sensitive to these unique patterns and their relation to stimulatory changes originating in the environment” (p. 15), what does it mean to be *sensitive*? Does it mean anything other than saying that organisms alter their behavior partly as a function of those patterns? And if that is all it means, what then of self-descriptive behavior? Is the self-descriptive behavior a necessary result of those patterns? I can report, perhaps, that an object I’m holding at dark is my smartphone or an empty glass. But I cannot report increases in say, insulin after dinner, or cannot report about the action of the muscles at my thigh when I press the brakes of my car in driving. Both of these events might well “obey” the principles of tensegrity, and truly enough my body as a whole can be altered by both events, in the sense that the action of both might provide some sort of negative feedback loop that will “tell” my body that I shouldn’t eat more or that I can release the brakes now. They probably are patterns of MCS action that can be related to particular stimulatory changes in the environment (e.g., dinner time). And yet, they escape verbal description.

So, even though the multifractal tensegrity provides a more elegant, if sesquipedalian, account of the action and interaction of physiological events at different scales, at least in what regards privacy we are exactly in the same point. What advantages does this analysis offer over one that simplifies said patterns into private stimuli and responses? As I said before, couldn’t a Skinnerian say that those patterns of activity *are* the discriminative stimuli that Skinner proposed? Should the role of the psychologist interested

⁶ The most particular characteristic of fractal objects is that their big complexity can be seen independently of the scale at which it is observed, such that when a part of a fractal object is enlarged it is observed that the enlarged part is *similar in structure* to larger parts of the object or to the whole object itself (this is what is meant by the adjective “self-similar”). This *scale-invariance* is described mathematically by a power law, which includes a particular scaling exponent.

in so-called privacy be the identification of those *unique* patterns? Is this what the authors mean by “a coherent system within which to analyze and interpret private events”?

Psychology is Not the Science of the Organism

It is easy to understand now why Jacobs et al., had some problem with the fact that Skinner didn't attempt “to specify the physical goings on within the organism's body” (p. 3). For them, it seems, unless behavior analysts understand the body they cannot fully understand behavior. I'm confused, though, on whether the understanding of the body as a multifractal tensegrity is necessary to understand *all* behavior, or whether it is only necessary to understand private events. Maybe the answer to my previous question about what the authors mean by privacy is that private events are bodily events, and maybe by extension all physiological, bodily events are private events. Whatever the case, they are ultimately correct: no understanding of behavior is truly complete without understanding its physiological bases. No understanding of human behavior is also truly complete without understanding social institutions, politics, economics, and culture. To completely understand aggression, for instance, we need to understand it at the level of neurotransmitters, at the level of neural networks, at the level of the central nervous system structures or at the level of the activity of the peripheral nervous system and the endocrine system; we need to further explore it at the ecological level and in terms of increased fitness; we can also explore it at the ontogenetic level in terms of development or in terms of a history of reinforcement and punishment; further, we can also explore it at the level of groups, and institutions, as a result of economic and political strife, and also as a cultural phenomenon.

As should be obvious, such complexity implies that the different scales are qualitatively different even if interdependent, analyzed at different spatio-temporal scales, and with different methods. So, why should we expect that the scientists and researchers working at a particular scale should explore those of other scales? Who has the time, the resources, and the academic background and expertise to address such complex phenomena in more than one scale? Why should the physiologist interested in the properties of synaptic communication be concerned with understanding aggression as a result of economical or political alienation? Why should the applied behavior analyst hoping to reduce the frequency of aggressive behaviors of a client be concerned with cortisol levels or increased activity of the amygdala, particularly when he cannot observe any of them? So, likewise, why should a behavior analyst interested in why someone says “I feel like dancing” be concerned about whether the cell is a tensegrity icosahedron? And isn't this precisely what Jacobs et al. propose when they suggest their approach will lead to an “empirically driven account” of private events? That *we* should start analyzing patterns of multifractal tensegrity (which, by the way, are to the best of my knowledge unobservable) as they correspond to environmental events?

At least Skinner left the task to the “physiologist of the future” (1974, p. 236). Further, this is what Skinner, *forty* years ago, had to say about this issue: “To agree that what one feels or introspectively observes are conditions of one's own body is a step in the right direction [...] [*but what is felt or introspectively observed is not an important part of the physiology which fills the temporal gap in a historical analysis.*] [...] self-knowledge arose much later in the history of the species, as the product of social contingencies arranged by the verbal community” (Skinner, 1974, pp. 238-239; italics in the original). I think that his comments are quite relevant to the proposal by Jacobs et al.

You Will Know Them by Their Fruits

It is quite telling of the futility of the whole enterprise that the authors do not provide *any* evidence of how their multiscale approach would deal with any of the problems traditionally posed by privacy in radical behaviorism, not even Skinner's famous “toothache” argument. The closest they get to

provide such evidence of the usefulness of their approach is in an obscure paragraph that starts with the ear as a tensegrity system and then mysteriously ends up being about Skinner's translations of intentional idioms to "Behaviorese," concluding that their emphasis in lawfully constrained patterns "*might* give new meaning to Skinner's (1974) behavioral translation of self-descriptive statements concerning 'feelings.'" (p. 16; italics are mine). What such 'new meaning' is, I suppose, is left to the reader to figure out, although maybe what they mean is stated in the next paragraph: "We extend Skinner's (1974) interpretation by contending that statements concerning feelings are indicative of environmental contingencies *and* lawfully constrained bodily states" (p. 16; italics in the original). How exactly is this an extension?

Further, if we take the example they use, where Skinner argues that in some cases saying "I feel like playing cards" can actually mean "I feel as I often feel when about to play cards," their new translation would come up as something like this: "The multifractal tensegrity to which my body is accommodating now is like the multifractal tensegrity to which my body accommodated when about to play cards." Hardly a superior translation, I would say. It's not surprising that when they argue that "[the] statement, 'I feel like going to a concert' can be translated into empirically derived statements concerning the coordination of the whole body—from ear to cell—under circumstances related to concert-going," (p. 17) they forget to provide even a single example of what such statements—which mysteriously seem to include the ear—would look like.

Nonetheless, the authors are hopeful that the specification of these unique patterns—which if we're to believe them are now being developed at the level of cellular behavior—will eventually be shown to spread to higher levels according to the principles of fractal geometry, and then, *alas* only then, we will know something about what is it that we feel or introspectively observe, "that is, the observer's own body" (p. 17). I guess everything that the physiologists have been telling us for the last few centuries is wrong. In any case, this highly speculative hypothesis is supposed to "demonstrate a methodological path toward eliminating privacy from behavior analysis" (p. 17). It seems to me, though, that all that their approach points out to is a sort of *eliminative materialism*, that is, the reducing intentional idioms to physiological states. In light of their emphasis in the MCS maybe we should call it *peripheral*, but hardly a new proposal if one knows anything about the rise and demise of logical positivism, or about the recent ideas in the embodied cognition field. What is, however, the *methodological path* that they suggest? They actually haven't offered one, unless by that they mean: "Wait until the ecological psychologists figure it out," or maybe that when asked we should appeal to the existence of some hypothetical tensegrity spreading multifractally from our cells.

I hope it should be clear that I have nothing against Turvey and Fonseca's (2014) theoretical proposal, and much less against their interesting research. I do think that they point out to interesting phenomena and that they are able to deal, conceptually at least, with complex phenomena without appealing to representations and some other forms of hypothetical constructs. I also concur that understanding the physiological bases of behavior is important. I think, however, that Jacobs et al. adoption of this model is somewhat premature and that the implications it might have for the issue of privacy need to be worked out in a more accurate manner than a "*might*." In between, the authors have done little to solve the jigsaw puzzle of privacy, and might even have misplaced a few of the pieces. I think the abundant conceptual errors, the misinterpretations, and the misplaced trust in an as-to-yet hypothetical system are nothing but evidence of how futile and ultimately counterproductive the debate of privacy is, how little it has advanced our knowledge of behavior in general, and how it might lead one to do not only bad psychology but bad physiology, points that have been elegantly discussed by Harzem (2000), Rachlin (2003), and Baum (2011) among others.

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Ajuste Social y Académico de Parejas Focales en salones de Integración Educativa ¹

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Resumen

Para analizar el ajuste social y académico de niños con necesidades educativas especiales (NEE) y niños regulares (REG) en salones de integración educativa de segundo grado (N=125) se conformaron 12 parejas focales (NEE-REG). Se contrastó el rendimiento académico (RAc) medido con el Inventario de Ejecución Académica (IDEA) y con promedios de calificaciones (PGC), y posteriormente se evaluaron tres variables sociales: 1) estatus sociométrico (ES) para identificar la posición relativa del alumno en el grupo; 2) relaciones de amistad (RDA) para conocer el número de amigos recíprocos y unilaterales; y 3) aceptación social (AS) a fin de saber el nivel de aprobación grupal de cada alumno. Para estimar estabilidad temporal, estas variables se midieron en dos cortes de observación, al final y al principio del siguiente curso escolar. Los resultados mostraron un RAc superior al 18% a favor de los niños REG, pero no hubo diferencias significativas en la medición de las tres variables sociales entre los dos grupos. 60% de NEE y 83% de REG mostraron criterios de ajuste. La estabilidad temporal a seis meses fue baja para las tres variables sociales evaluadas.

Palabras clave: *ajuste socio-académico; parejas focales, salones de inclusión educativa, estatus sociométrico*

Abstract

To analyze the social and academic adjustment of children with special educational needs (NEE) and regular children (REG) in second grade integration classrooms (N = 125) were formed 12 focal couples (NEE-REG). It was contrasted academic performance (RAc), measured with the inventory of academic performance (IDEA) and grade point averages (PGC), and subsequently three social variables were evaluated: 1) sociometric status (ES) to identify the relative position of students in the group; 2) relations of friendship (RDA) to know the number of mutual and unilateral friends; and 3) social acceptance (AS) to identify the level of approval of each student group. To estimate temporal stability of these variables they were measured in two cuts of observation, at the end and the beginning of the next school year. The results showed a higher RAc 18% in favor of REG children, but there were no significant differences in the measurement of the three social variables between the two groups. The 60% of NEE and 83% of REG showed adjustment criteria. The evaluation of temporal stability, at six months, was low for the three evaluated social variables.

Keywords: *socio-academic adjustment; focal couples, integration classrooms, sociometric status.*

El ajuste del alumno en el medio escolar se ha relacionado a diversas variables; por ejemplo, Wentzel (2002) señala que es producto de la motivación, la conducta social y la ejecución académica; Ladd, Kochenderfer & Coleman (1996) señalan que surge de procesos que empoderan al niño para enfrentar exitosamente las demandas del medio ambiente escolar; y, Chen, Wang & Cao (2011) afirman que es el resultado del manejo de cualidades conductuales, como la iniciativa, exploración y auto-expresión en un

¹ La referencia de este artículo en la web es: <http://conductual.com/content/ajuste-social-academico-parejas-focales-en-salones-de-integracion-educativa>

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ambiente competitivo. La importancia del ajuste se vincula con los efectos duraderos y acumulativos del individuo en el corto y largo plazo (Parker, Rubin, Price, & DeRosier, 1995), en aspectos como la expresión de comportamiento pro social y pro académico (Wentzel, 1993); status con pares (Wiener, 2004) y relaciones de amistad (Wiener, 2002). Similarmente, el comportamiento que demuestra desajuste individual tiene efectos a través del tiempo, e.g., agresión relacional, victimización o abuso de compañeros (DeRosier & Thomas, 2003); ostracismo y aislamiento (Coie & Kupper-Smith, 1983); baja dedicación a la tarea y bajo rendimiento académico (Dishion, 1990; Lago-Delello, 1998); y presencia de conducta antisocial (Dishion, 1990).

Un niño ajustado socialmente presenta mayor aceptación que un niño con desajuste (DeRosier y Thomas, 2003); sin embargo, como lo señalan Achenbach & Edelbrock (1981), entre el 20 y el 30 por ciento de la población de niños en edad escolar presentan dificultades de ajuste, mismas que han sido citadas frecuentemente en la literatura como característica de los niños en riesgo y con problemas de aprendizaje y de conducta (e.g., Farmer, Pearl & Van Acker, 1996; Lago-Delello, 1998, Montagne & Rinaldi, 2001). Estos problemas se derivan de diversos factores, entre los que se encuentran: bajos niveles de aceptación grupal (Bursuck, 1989; Hoyle & Serifica, 1988); rechazo de compañeros (Vaughn, Elbaum & Shumm, 1996); bajos índices funcionales de interacción social (Rubio & Santoyo, 2004); mala calidad en las relaciones de amistad (Farmer & Hallowell, 1994; Wenz-Gross & Siperstein, 1997); y bajo perfil de estatus sociométrico en el grupo (Sabornie & Kauffman, 1985; Sale & Carey, 1995).

Para nuestros fines, definiremos el término “ajuste socio-académico” con referencia a López (1984), como: “toda aquella conducta que coadyuva al logro de metas académicas y sociales establecidas por la institución educativa”. La carencia de repertorios o habilidades identificadas como sociales o de valor educativo en correspondencia a un grado escolar y la falta de condiciones que faciliten la interacción del alumno en la escuela se relacionará irremisiblemente con la presencia de patrones conductuales de desajuste en el niño.

El estudio del ajuste escolar se ha instrumentado principalmente a partir de procedimientos de nominación personal, que consisten en la selección o valoración libre de los miembros de un grupo en respuesta al empleo de preguntas específicas relacionadas al agrado o desagrado de los compañeros. Entre los aspectos estudiados se encuentran: el estatus sociométrico (e.g., Coie, Dodge, & Coppotelli, 1982; Coie & Dodge, 1988); las filiaciones de amistad (e.g., Berndt, Howkins & Hoyle, 1986; Buhrmester, 1996); y la aceptación social (e.g., Parker y Asher, 1987, 1993; Dielh, Lemerise, Caverly, Ramsay, & Roberts, 1998), cuyo empleo permite identificar los niveles de aprobación o aceptación con que cuenta cada estudiante en el salón de clases.

La medida de estatus sociométrico implica la asignación de los miembros de un grupo en categorías de clasificación nominal (i.e. rechazado, popular, ignorado, controversial y promedio). Esta asignación surge de la combinación de nominaciones de agrado y desagrado que emite cada integrante hacia sus compañeros y de la relación entre las dimensiones de preferencia social e impacto social (Newcomb & Bukowsky, 1983). El empleo de estos procedimientos se realiza para comprender los patrones conductuales de los niños cuya aceptación o rechazo los ubica en condiciones de riesgo psicológico y social (Dodge, Coie, Pettit & Price, 1990) y para describir las relaciones sociales entre niños con diferente estatus sociométrico (e.g., Frenzt, Gresham, & Elliot, 1991; DeRosier & Thomas, 2003; Dodge et al., 2003; Sale & Carey, 1995; Wentzel, 1991). Su uso frecuente en la investigación social se debe a los altos índices de confiabilidad y validez predictiva (DeRosier, Kupersmidt, & Patterson, 1994) y por su importancia como indicador de ajuste social (Dodge et al., 2003).

Otro indicador de ajuste que se deriva de procedimientos de nominación personal es la aceptación social (e.g., Parker y Asher, 1993, Wiener, 2004), cuya manifestación se relaciona a los estándares normativos de comportamiento individual establecidos por un grupo. Por su relación con el desempeño académico, la aceptación social se considera un buen predictor de rendimiento escolar (Wentzel, 1991) y un moderador de adversidad familiar y de problemas conductuales en el niño (Criss, Petit, Bates, Dodge, & Lapp, 2002). La aceptación social, como calificación estandarizada, se mide a partir de las nominaciones de agrado dadas por el total de integrantes que ubican a cada individuo en niveles que varían entre baja y alta aceptación (Diehl et al, 1998).

Las relaciones de amistad es otro indicador de adaptación social que se mide con procedimientos de selección o nominación individual. Tener amigos es una fuente de apoyo importante para el niño a través de su formación básica (Ladd, 1996), promueve el desarrollo y contribuye al ajuste social (Buhmester, 1990; Dunn, Cutting, & Fisher, 2002; Ladd, 1996; Parker & Asher, 1993), además de ser un amortiguador y preventivo de adversidades sociales (e.g., Criss, et al., 2002; Parker et al., 1995; Diehl et al., 1998), sobre todo cuando las relaciones amistosas muestran estabilidad y durabilidad en el tiempo (Berndt, Hawkins, & Hoyle, 1986). Contar con un amigo en la escuela proporciona a un niño oportunidad y contexto para desarrollar habilidades sociales a través del ciclo escolar por lo que se manifiesta como un buen predictor de ajuste social (Diehl et al.1998). Por otra parte, carecer de amigos se vincula a desajuste (DeRosier & Thomas, 2003); limita fuentes de protección y promueve condiciones de riesgo (Criss, et al., 2002) como, rechazo de compañeros (Asher, Hymel, & Renshaw, 1984); actitudes contrarias a la escuela (Diehl, et al., 1998); y sentimientos de soledad (Wiener, 2004).

El estudio del ajuste social y académico de niños con desventajas ha cobrado importancia a partir del impulso a las iniciativas de inclusión e integración en la educación regular. En estas situaciones se han realizado diversos estudios con el propósito de analizar las diferencias que se presentan entre niños con dificultades para aprender y alumnos regulares (e.g., Hoyle & Serifica, 1988; Juvonen & Bear, 1992; Prillaman, 1981; Sale & Carey, 1995; Vaughn & Hogan 1994; Wenz-Gross & Siperstein, 1997). Las conclusiones que en lo general se desprenden de estos trabajos sugieren que los niños con desventajas para el aprendizaje experimentan mayores problemas de ajuste social en comparación con niños regulares; sin embargo, los resultados no han sido muy consistentes ya que estudios de eficacia reportados por Thousand y Villa (1999) y Hunt y Goetz, (1997) demuestran beneficios que se derivan del esquema de inclusión en el rendimiento académico y en las relaciones sociales de niños con necesidades especiales.

En nuestro medio, los estudios reportados con niños que presentan Necesidades Educativas Especiales (NEE) en ambientes de integración son muy escasos. En uno de los pocos estudios registrados, Rubio y Santoyo (2004) al comparar niños de diversas edades escolares con y sin NEE, observaron que los niños con desventaja desplegaron una menor cantidad de interacciones sociales en el salón de clases y en la zona de juegos; igualmente, advirtieron que estos niños tuvieron poca participación en actividades académicas y un mayor tiempo de ocio en contraste a sus compañeros regulares. Los bajos índices funcionales de correspondencia y efectividad social exhibidos, evidenciaron dificultades de adaptación en los niños con NEE.

La carencia de estudios sistemáticos sobre ajuste social y académico de niños con NEE en la enseñanza regular, no ha permitido reconocer la importancia formativa y los alcances de la estrategia de integración educativa en México, lo que limita la posibilidad de validar y generalizar información derivada de otros ambientes en donde se analizan los efectos de las prácticas inclusivas. A este respecto, cabe hacer mención que el Sistema Educativo Nacional registra aproximadamente a 230,000 niños con NEE en aulas regulares de la educación primaria (SEP, 2014), lo que representa más o menos el 1.5% de la matrícula total; situación que por su magnitud demanda estudios pormenorizados que destaquen la condición que

guardan estos alumnos en el sistema regular y establezcan la propiedad de las estrategias inclusivas; hecho que no tan sólo validaría dichas medidas educativas, sino que daría lugar a la mejora en la integración de estos niños con especiales de enseñanza-aprendizaje.

Por estas razones, este estudio se planteó un doble objetivo, en primer lugar, analizar el ajuste social y académico de niños con NEE en comparación con alumnos regulares en salones de enseñanza primaria; y, en segundo término, aportar información preliminar que permita dirigir nuevos estudios en el campo para conocer las implicaciones de la estrategia de integración educativa en nuestro contexto.

Una primera hipótesis, es que los alumnos con NEE presentarán un nivel de rendimiento académico más bajo en materias curriculares que sus compañeros de salón de clases, lo que se puede relacionar funcionalmente al ajuste escolar del alumno.

Por otra parte, diversos estudios sugieren que los niños con discapacidad en el aula regular presentan menor aceptación social (e.g., Ray, 1985; Sale & Carey, 1995) y tienen menos habilidades sociales que sus compañeros sin requerimientos de enseñanza especial (Juvonen & Bear, 1992; Rubio & Santoyo, 2004), situación que disminuye las posibilidades de acceder a redes sociales que facilitan el proceso de ajuste en el contexto escolar. Bajo esta observación, una segunda hipótesis es que los niños con NEE presentarán mayores dificultades de ajuste social que sus compañeros regulares.

Una tercera hipótesis, es que la condición de aceptación o rechazo social observada en alumnos, con y sin NEE, será estable en el mediano plazo (seis meses), lo que permitirá evaluar el ajuste o desajuste social en el mismo contexto a lo largo del tiempo.

Para cumplir el objetivo expuesto y verificar nuestras hipótesis, se realizó un estudio de campo en el que participaron niños con NEE y niños de enseñanza regular (REG) inscritos en salones de integración educativa, siendo la estrategia metodológica la formación de dos grupos (NEE y REG) a partir del apareamiento de parejas focales (Santoyo & Espinosa, 2006) con la finalidad de realizar comparaciones directas en la observación de variables académicas y sociales para estimar niveles de ajuste social y escolar en las muestras bajo estudio. La selección de niños regulares con características afines a los alumnos con NEE como parámetro de comparación y la integración de parejas focales para establecer contrastes de ajuste socio- académico, permite eliminar el sesgo comparativo con la población total en donde se ubican niños con altos índices de rendimiento, estableciendo con ello relaciones más justas metodológicamente hablando.

Método

Participantes

En el estudio participaron 24 niños de segundo grado de primaria, 12 niños con NEE, ocho hombres y cuatro mujeres, con una edad promedio de 8.3 años; y 12 niños regulares (REG), seis hombres y seis mujeres, cuya edad promedio fue de 7.6 años. Los niños asistían a cuatro escuelas públicas del Estado de México, donde funcionaban cinco aulas del mismo grado (con un total de 125 alumnos) de acuerdo al modelo de integración educativa de la Secretaría de Educación Pública (SEP). Los niños con NEE fueron diagnosticados previamente con “problemas de aprendizaje” por personal de las USAER, e incorporados a grupos regulares en proporción de 11 a 1 con sus pares regulares. La participación de los niños en el estudio fue con el consentimiento de las autoridades escolares, de los cinco maestros titulares de grupo, así como de sus padres.

Instrumentos

Se emplearon los siguientes instrumentos y medidas:

1) Inventario de Ejecución Académica (IDEA) (Macotela, Bermúdez, & Castañeda, 2003). Esta prueba evalúa el nivel de conocimientos de las áreas académicas de escritura, matemáticas y lectura de los tres primeros años de educación primaria. En este estudio se emplearon los instrumentos de las tres áreas de segundo grado, donde se incluyen en total 10 categorías, 32 reactivos, 52 incisos y 20 sub-incisos en correspondencia al grado. Cada habilidad se evalúa a través de dos estímulos (e.g., dos operaciones de resta, dos conjuntos de conteo, etc.). Los aciertos posibles en las tres áreas permite la calificación de respuestas correctas y los porcentajes globales y por área alcanzados.

El IDEA se seleccionó como medida independiente al sistema para evaluar rendimiento académico (RAc). El coeficiente de consistencia interna del instrumento reportado por Macotela et al. (2003) fue de .80 mediante el empleo de la técnica de división por mitades de los reactivos por área y grado, y una correlación alta y positiva entre parejas de áreas (lectura- aritmética; escritura-lectura; y aritmética-escritura) para cada grado académico evaluado de .60.

2) Promedio General de Calificaciones (PGC). Derivada de las notas de aprovechamiento en la escuela, el PGC (Wentzel, 1991) se instrumentó como la media de calificaciones en las asignaturas de aritmética, español y conocimiento del medio obtenidos en los cinco bimestres previos al estudio. Las calificaciones fueron tomadas de los registros escolares en donde cada asignatura fue evaluada con una nota que varió entre 0 y 10, siendo el criterio mínimo de aprobación el valor de 6.

3) Estatus Sociométrico (ES). Con esta medida se identificó la posición relativa de cada miembro del grupo. Su obtención se derivó de los procedimientos descritos por Coie, Dodge, y Coppotelli (1982) para nominar a los compañeros con base en preferencias personales. La condición de prueba se instrumentó con un cuestionario integrado por preguntas de nominación positiva y negativa para elegir a tres compañeros de mayor y menor agrado. El total de nominaciones positivas y negativas de cada niño se estandarizaron para obtener dos dimensiones: preferencia social (PS), obtenida de la resta de las nominaciones positivas menos las nominaciones negativas; e Impacto social (IS), resultante de la suma de las nominaciones positivas y las nominaciones negativas. Los puntajes de PS e IS estandarizados por grupo, permiten clasificar a los niños en su respectivo estatus sociométrico: popular, promedio, controversial, ignorado o rechazado (Coie et al., 1982, 1988). Un niño se clasifica como popular si su puntaje de PS es mayor o igual a 1, un puntaje de agrado estandarizado mayor que 0, y un puntaje de desagrado estandarizado menor que 0. Los niños rechazados son aquellos que tienen una PS menor a -1, un puntaje de agrado estandarizado menor que 0, y un puntaje de desagrado estandarizado mayor que 0. Los niños ignorados presentan un IS estandarizado menor que -1, y puntajes de agrado y desagrado estandarizados menores que 0. Los niños controversiales son los que presentan un IS estandarizado mayor que 1 y puntajes de agrado y desagrado mayor a 0. Los niños restantes son clasificados como promedio (Newcomb, Bukowski, & Patee, 1993).

Coie et al. (1982) reportaron índices de confiabilidad test-retest (a 12 semanas) con el empleo de medidas de nominación de 24 descripciones conductuales y dos medidas de nominación de mayor agrado y de menor agrado que variaron de .46 a .48 de acuerdo al cálculo de correlación producto-momento de Pearson, con un puntaje de correlación promedio de .65, y una confiabilidad entre los puntajes de nominación de mayor y menor agrado de .65 para alumnos de tercer, quinto y octavo grado de enseñanza.

4) Relaciones de amistad (RDA). La selección de amigos se instrumentó a partir de la nominación de tres compañeros considerados “mejores amigos” en el salón de clases. Las nominaciones personales se

cotejaron con las proporcionadas por los otros integrantes del grupo escolar para determinar si existía mutualidad en la elección (amigos recíprocos) o sólo elección unívoca (amigos unilaterales).

5) Aceptación Social (AS). La AS se obtiene como un valor estandarizado que describe la tendencia central o promedio de las calificaciones de aprobación que recibe un individuo en un grupo (Parker et al, 1995). En este estudio la AS se derivó de los valores de nominación positiva en la aplicación del cuestionario sociométrico. Específicamente, en cada salón de clases se calculó el promedio de los puntajes de nominación de agrado recibido por cada niño y la estandarización de esos valores en cada uno de los salones de clases (puntajes z) (Diehl et al., 1998). La AS de los niños se clasificó de acuerdo a Parker y Asher (1993) en tres niveles: Los niños que tuvieron un puntaje de aceptación $< \text{ó} = -1.00$ fueron clasificados como aceptación baja; los niños que tuvieron un puntaje z de agrado entre > -1.00 y < 1.00 se les clasificó como aceptación media; y los niños cuyos puntajes de agrado se presentaron en un valor de $> \text{ó} = 1.00$ se les consideró como niños con un nivel de aceptación alta.

6) Criterios de ajuste y desajuste social. Los criterios para calificar ajuste y desajuste social se adaptaron de los empleados por Juvonen y Bear (1992) con relación a las medidas de estatus social (ES) y número de amigos recíprocos (AR); y de Parker y Asher (1993) en referencia a la medida de aceptación social (AS). Los niños con ajuste y con desajuste debían cubrir al menos dos de tres criterios expuestos en la Tabla 1.

Variables sociales	Criterios de ajuste	Criterios de desajuste
Estatus sociométrico	Promedio ó Popular	Rechazado ó Ignorado
Amigos recíprocos	= ó > 1	Cero
Aceptación social	Promedio ó Alto	Bajo

Tabla 1. Criterios para calificar ajuste y desajuste en niños de grupos de integración.

Procedimiento

Los procedimientos estuvieron a cargo de tres psicólogos (dos hombres y una mujer) familiarizados con los objetivos de la investigación.

Los escenarios de trabajo fueron: 1) salones de clases (aulas de integración), donde se realizaron actividades grupales (e.g., nominación de compañeros); y, 2) salones de usos múltiples donde se desarrollaron procedimientos individuales (e.g., evaluación de RAc). Estas aulas, contaban con mobiliario escolar diverso, tenían buena iluminación y no presentaban ruidos que interfirieran con el ambiente de enseñanza.

Evaluación del rendimiento académico (RAc). El IDEA se aplicó individualmente en los salones de usos múltiples sin la presencia de otros niños o adultos. Después de establecer rapport con el niño, el evaluador explicó el motivo de la prueba de la siguiente forma: “X” (nombre del niño) te voy a dar una prueba que tiene varias preguntas sobre aritmética, lectura y escritura para ver qué tanto te acuerdas de ellas”. Cuando el alumno asentía en responder el inventario, el evaluador añadió que el resultado de la prueba no tendría valor sobre sus calificaciones y que nadie conocería sus respuestas incorrectas. Posteriormente, se le dieron instrucciones específicas (contenidas en el instrumento) para que respondiera a la prueba en cada una de las tres áreas evaluadas (aritmética, lectura y escritura). Al terminar, el evaluador condujo de regreso al niño a su salón de clase y agradeció su participación. La aplicación del inventario se realizó en una sesión, en tiempos que variaron de 30 a 90 minutos. Los niños que por algún motivo mostraban indisposición (e.g., malestar físico o falta de participación), se les re-programó la evaluación al día siguiente. Se computó el número de respuestas correctas en cada una de las tres áreas evaluadas y se

obtuvo el promedio de respuestas correctas por área. El PGC se obtuvo de las calificaciones por alumno de cinco bimestres en las asignaturas de aritmética, español y conocimiento del medio.

Obtención del estatus sociométrico (ES). El maestro proporcionó al niño dos hojas de respuesta con la siguiente instrucción: “piensen en los niños del grupo que más les agraden o con quienes más les gusta jugar y escriban sus nombres y primer apellido en los renglones marcados con los números 1, 2 y 3. Si no están seguros de un nombre o apellido pueden consultarlo en la lista del grupo”. Al terminar, el maestro repitió las mismas instrucciones enfatizando que los nombres a seleccionar sería de los tres niños que menos les agradaran o con quienes no les gustara jugar. A partir de las nominaciones individuales y la obtención de los puntajes de preferencia e impacto social se clasificó a cada niño en su estatus sociométrico.

Nivel de aceptación social (AS). Los puntajes de agrado en la aplicación del cuestionario sociométrico fueron promediados y estandarizados en cada uno de los grupos; los valores estandarizados obtenidos permitieron la clasificación de los niños en las categorías de baja, media y alta aceptación en el grupo.

Relaciones de amistad (RDA). Cada niño recibió la siguiente indicación: “quiero que pienses en tres de tus compañeros, niños o niñas, que consideres tus mejores amigos en el salón de clases y los escribas en los espacios de esta hoja (del 1 al 3)”. Cuando el niño tardaba mucho tiempo en responder se le decía que si sólo tenía uno o dos amigos, dejara los demás espacios en blanco. Las nominaciones mutuas entre dos alumnos fueron calificadas como amigos recíprocos (ARec), mientras que las nominaciones sin correspondencia se calificaron como amigos unilaterales (AUni).

Calificación de ajuste. Los niños fueron clasificados como ajustados o desajustados con base en los criterios de ES, ARec y AS previamente establecidos.

Los procedimientos se llevaron a cabo en el último mes del ciclo escolar (corte 1). Seis meses después se replicaron los procedimientos (corte 2) para evaluar estabilidad en las medidas de ES, AS, y RAc, cuando los niños ya se encontraban en el siguiente grado escolar (tercero).

Resultados

La tabla 2 muestra los datos sobre RAc (IDEA y PGC) y variables sociales (ES, AS y ARec y AUni) de la población (N= 125) y total de alumnos en ajuste y desajuste.

Los resultados de la aplicación del IDEA y del PGC (N = 125) correlacionaron de manera positiva ($r = 0.700$) a un nivel de $p < 0.01$, lo que permitió seleccionar 12 parejas focales tomando una de estas medidas (PGC) como principal variable de asociación.

Los 12 niños con NEE fueron agrupados con 12 niños regulares (REG) para conformar dos grupos y 12 parejas focales. Las variables para asociar a los niños fueron: 1) que asistieran al mismo salón de clases, 2) que se encontraran en el mismo rango percentil del PGC, y 3) que fueran de la misma edad y género. La Tabla 3 muestra las características de los integrantes de ambos grupos. 10 de las doce parejas (4 de niñas y 6 de niños) quedaron balanceadas de acuerdo a los criterios seleccionados, las dos parejas restantes se conformaron por diferente sexo. 10 de los participantes fueron del género femenino y 14 de género masculino.

RENDIMIENTO ACADEMICO (RAc)					
	PROMEDIO	DE	RANGO	PORCENTAJE	
IDEA(RCT)*	X = 79.2	26.15	13-137	53.8 %	
PGC (CAL)**	X = 8.08	1.06	6.0-9.9	80.1%	

ESTATUS SOCIAL (ES)					
ES	Pop = 20	Rech.= 16	Prom.=67	Cont.=7	Ignor=15

ACEPTACION SOCIAL (AS)			
AS	Bajo = 19	Medio=90	Alto= 16

RELACIONES DE AMISTAD (RDA): AMIGOS (A) RECIPROCOS Y UNILATERALES						
ARe.	Cero =33	Uno=49	Dos= 28	Tres=13	Total=144	
AUni.	Cero =36	Uno=34	Dos= 23	Tres=13	4-8= 17	Total= 207

CALIFICACIÓN DE AJUSTE*			
Ajustados	101 = 81.5%	Desajustados	23= 18.5%

Tabla 2: Concentrado de la muestra total (N= 125) distribuida en 5 salones de integración con relación a rendimiento académico (IDEA y PGC) y tres variables sociales evaluadas: estatus sociométrico (ES), Aceptación social (AS) y relaciones de amistad (RDA).

Notas: * Respuestas correctas totales. ** Calificaciones; DE = Desviación Estándar; ES = Estatus Sociométrico, Pop = popular, Rech.= Rechazado, Prom = promedio, Cont. = controversial, Ignor.= ignorado; AS = Aceptación Social; ARec.= Amigos recíprocos; AUni.= Amigos unilaterales.

Salón	Pareja Focal	Grupo	Sexo	Edad (años)	PGC** Calif./ (p)	Grupo	Sexo	Edad (años)	PGC Calif./ (p)
1	1	NEE	FEM	7	8.4 / 60	REG	FEM	9	8.2 / 60
1	2*	NEE	MASC	8	6.0 / 20	REG	FEM	8	6.4 / 20
1	3	NEE	MASC	9	7.3 / 40	REG	MASC	7	7.5 / 40
2	4	NEE	MASC	8	6.3 / 20	REG	MASC	7	6.8 / 20
2	5	NEE	FEM	8	6.6 / 20	REG	FEM	8	6.6 / 20
2	6*	NEE	MASC	9	6.2 / 20	REG	FEM	8	6.8 / 20
3	7	NEE	FEM	8	7.5 / 40	REG	FEM	7	7.7 / 40
3	8	NEE	FEM	8	6.4 / 20	REG	FEM	8	7.0 / 20
4	9	NEE	MASC	9	6.2 / 20	REG	MASC	8	6.8 / 20
4	10	NEE	MASC	10	6.4 / 20	REG	MASC	7	7.1 / 20
5	11	NEE	MASC	8	9.2 / 80	REG	MASC	8	9.1 / 80
5	12	NEE	MASC	8	6.7 / 20	REG	MASC	7	7.1 / 20

Tabla 3. Parejas focales por salón de clases, rango percentil en el PGC, edad y sexo

Nota: * Parejas de diferente género. ** Calificaciones de corte por punto percentil (p) fueron: p20 = 7.1; p40 = 7.7; p60 = 8.4; p80 = 9.8; p100 = 10.

Rendimiento académico (RAc). El promedio de respuestas correctas obtenido en el IDEA en todos los alumnos acoplados (n = 24) fue de 53.96 (DE = 25.47) correspondiente al 36.44% del total de opciones de respuesta (diferencia de 18.72% a favor de los Focales Regulares)

El grupo de niños REG tuvieron una media de ejecución de 67.83 (DE = 21.75) y los niños con NEE alcanzaron una media de 40.08 (DE = 21.51). La diferencia de medias entre ambos grupos (27.75) fue significativa a favor de los niños regulares: t (22) = 3.142, p = 0.005.

Estatus sociométrico (ES). En un primer corte, ambos grupos presentaron una distribución sociométrica parecida. El 41.6% de los niños (5 por grupo) se ubicaron en la categoría de “promedio”. Igualmente, en cada grupo se identificó un niño popular y uno controversial. De los niños con NEE, 3 niños fueron “rechazados” y 2 fueron clasificados como “ignorados”, mientras que en los niños REG estas cifras se invirtieron: 2 “rechazados” y 3 “ignorados”. En la Tabla 4 se muestra el estatus sociométrico obtenido por cada pareja focal (NEE-REG) para los dos cortes de evaluación.

En el segundo corte de evaluación, 4 niños REG no tuvieron asignación sociométrica por cambio de salón o escuela. Los 8 niños restantes, 4 niños (50%) se mantuvieron en la misma categoría de estatus sociométrico (2 promedio, un rechazado y un ignorado). Los niños con NEE, el 42 % (5 niños) se mantuvieron en la misma categoría identificada seis meses antes con los mismos compañeros (2 rechazados, 2 promedio y uno ignorado).

Salón	Pareja Focal	Grupo	ESTATUS SOCIOMETRICO		Grupo	ESTATUS SOCIOMETRICO	
			Corte 1	Corte 2		Corte 1	Corte 2
1	1	NEE	PROMEDIO	RECHAZADO	REG	PROMEDIO	(*)
1	2	NEE	IGNORADO	RECHAZADO	REG	POPULAR	PROMEDIO
1	3	NEE	RECHAZADO	RECHAZADO**	REG	PROMEDIO	CONTROV
2	4	NEE	CONTROV-	RECHAZADO	REG	CONTROV	(*)
2	5	NEE	RECHAZADO	PROMEDIO	REG	RECHAZADO	(*)
2	6	NEE	PROMEDIO	PROMEDIO**	REG	IGNORADO	(*)
3	7	NEE	PROMEDIO	IGNORADO	REG	IGNORADO	PROMEDIO
3	8	NEE	PROMEDIO	PROMEDIO**	REG	PROMEDIO	PROMEDIO**
4	9	NEE	RECHAZADO	RECHAZADO**	REG	IGNORADO	IGNORADO**
4	10	NEE	POPULAR	PROMEDIO	REG	PROMEDIO	CONTROV
5	11	NEE	PROMEDIO	IGNORADO	REG	PROMEDIO	PROMEDIO**
5	12	NEE	IGNORADO	IGNORADO**	REG	RECHAZADO	RECHAZADO**

Tabla 4. Estatus sociométrico en dos cortes de medición (seis meses) en parejas focales.

Notas: (*) No se evaluó por cambio de salón o escuela. ** Conservaron mismo estatus social

Las diferencias medias en el número de nominaciones positivas (.750 y 1.08) y de nominaciones negativas (.250 y .500) recibidas por ambos grupos (REG y NEE) en las dos mediciones sociométricas no resultó significativa a nivel de $p < .05$ (nominaciones positivas corte 1: $t(22) = .948, p = .283$; nominaciones positivas corte 2: $t(18) = 1.873, p = .760$; y nominaciones negativas corte 1: $t(22) = .191, p = .916$; y nominaciones negativas corte 2: $t(18) = .375, p = .895$), lo que asume semejanzas entre ambos grupos en la forma en que son nominados por agrado y desagrado entre los compañeros de sus grupos escolares.

La estabilidad entre las 2 evaluaciones de estatus sociométrico fue medido a partir de la r de Pearson para los valores de nominaciones positivas y de nominaciones negativas entre los participantes en ambas mediciones (cortes 1 y 2).

Las nominaciones positivas medidas en los cortes 1 y 2 no correlacionaron de manera significativa ($r(20) = .215, p > .05$) implicando baja estabilidad en esta medida de nominación de pares; no obstante, las nominaciones negativas correlacionaron positiva y significativamente ($r(20) = .566, p < .01$.) denotando un nivel de estabilidad media en la selección negativa de los niños focales REG y con NEE entre ambas mediciones.

Relaciones de amistad. En el corte 1 ($n = 24$) se identificaron 18 nominaciones de amigos recíprocos, con una media de .75 ($DE = .795$). El 61.1% (11 nominaciones) corresponden a los REG y el 38.9% (7 nominaciones) a los NEE. En la tabla 5 se presentan las frecuencias y porcentajes de las nominaciones recíprocas en ambos grupos (REG y NEE).

AMIGOS RECÍPROCOS	REG		NEE		REG		NEE	
	CORTE 1		CORTE 2		CORTE 1		CORTE 2	
	FREC	%	FREC	%	FREC	%	FREC	%
0	4	33.3 %	6	50%	2	25.0%	6	50.0%
1	6	50.0 %	5	41.7%	5	12.5%	4	33.3%
2	1	8.3 %	1	8.3%	1	12.5%	1	8.3%
3	1	8.3 %	--	--	--	--	1	8.3%

AMIGOS UNILATERALES	CORTE 1		CORTE 2		CORTE 1		CORTE 2	
	FREC	%	FREC	%	FREC	%	FREC	%
0	4	33.3%	4	33.3%	1	12.5%	6	50%
1	2	16.7%	5	41.7%	3	37.5%	4	33.3%
2	2	16.7%	1	8.3%	2	25.0%	1	8.3%
3	1	8.3%	2	16.7%	2	25.0%	1	8.3%
4	1	8.3%						
5	2	16.7%						

Tabla 5. Frecuencias y porcentajes de amigos recíprocos en dos cortes de evaluación en niños focales regulares (REG) y con NEE.

14 niños (58.3%) tuvieron al menos un amigo recíproco, y 10 niños (4 REG y 6 con NEE) no registraron amigos recíprocos mediante el procedimiento de nominación individual. La diferencia media entre ambos grupos (.333) en el número de nominaciones recíprocas a favor del grupo de niños REG no resultó significativa con el nivel alpha .05: ($t(22) = 1.030, p = .314$), lo que establece igualdad de varianzas para ambos grupos.

El corte 2 (seis meses después) incluyó sólo a 8 de los focales regulares y a los 12 con NEE. De esta muestra ($n = 20$) el 60% (12 niños) tuvieron al menos un amigo y el resto (8 niños = 40%) no registraron amigos recíprocos (Tabla 5). La diferencia media entre los niños regulares y con NEE (.125) no resultó significativa estadísticamente: $t(18) = .321, p = .752$, indicando que el número de nominaciones recíprocas no difiere entre los niños regulares y los niños con NEE.

La estabilidad en la nominación de mejores amigos se calculó a partir del coeficiente de correlación de Pearson entre las dos mediciones realizadas (corte 1 y corte 2). La relación entre ambas variables es negativa y no significativa ($t(22) = -.226, p = .338$), indicando una baja asociación en el tiempo entre ambas variables. En total, 8 niños focales (3 REG y 5 NEE) mantuvieron las nominaciones del corte 1; 5 perdieron amigos y el resto (7) tuvieron más amigos en comparación al primer corte de medición.

Los amigos unilaterales ($N = 24$), sin nominación recíproca, tuvieron un promedio de 1.5 nominaciones ($DE = 1.59$), con un rango de 0 a 5 nominaciones en el primer corte de evaluación. En la Tabla 6 se muestran los datos de los grupos focales REG y con NEE. 8 niños (33.3%) de ambos grupos (4 reg. y 4 con NEE) no tuvieron nominaciones de mejores amigos, y 7 (29.2%) sólo tuvieron una sola mención de mejores amigos (2 REG y 5 con NEE).

Aceptación social (AS). En el primer corte de evaluación, los 24 sujetos focales (NEE –REG) se concentraron principalmente en el nivel de aceptación media (19 = 79.2%); 4 de ellos (16.7%) fueron identificados con aceptación baja, y sólo uno obtuvo el nivel de aceptación alta (8.3%). En el segundo corte (a los 6 meses) los 20 sujetos evaluados se distribuyeron de la siguiente forma: 14 niños (70.0 %) tuvieron aceptación media; mientras que 4 (20.0%) fueron aceptación baja y sólo 2 (10%) aceptación social alta en su grupo.

La distribución de los grupos (NEE y REG) para los cortes de evaluación 1 y 2 se presenta en la Tabla 6. En ambos cortes, la prueba T para muestras independientes indicó que no existieron diferencias

significativas entre los dos grupos (Corte 1: $t(22) = .447, p = .659$; y, Corte 2: $t(18) = 1.540, p = .141$), indicando con ello que existen varianzas similares para ambos grupos en las dos mediciones realizadas.

Con relación a la estabilidad entre ambas mediciones (Tabla 7), 12 niños (60%) conservaron su mismo nivel de aceptación, 11 de los cuales se ubicaron en el nivel medio y 1 en el bajo. Los 8 casos restantes (40%) cambiaron entre los tres niveles de AS, indicando un alto grado de permanencia en los niveles de aceptación después de 6 meses, al margen del cambio de grupo escolar.

AS	REG		NEE		REG		NEE	
	CORTE 1		CORTE 1		CORTE 2		CORTE 2	
	FREC	%	FREC	%	FREC	%	FREC	%
BAJA	2	(16.7%)	2	(16.7%)			4	33.3%
MEDIA	9	(75.2%)	10	(83.3%)	7	87.5%	7	58.3%
ALTA	1	(8.3%)			1	12.5%	1	8.3%

Tabla 6. Distribución de frecuencias y porcentajes de aceptación social (AS) Baja, media y alta, en los grupos focales de NEE y REG, para dos cortes de evaluación.

AS1	AS2			TOTAL
	BAJA	MEDIA	ALTA	
BAJA	1	2	0	3
MEDIA	3	11	2	16
ALTA	0	1	0	1
TOTAL	4	14	2	20

Tabla 7. Cruce de variables de aceptación social en el Corte 1 (AS1) y Corte 2 (AS2) en 20 sujetos focales (NEE-REG)

Ajuste Social. Con base en los criterios de ajuste y desajuste (Tabla 1), el 70.8 % de los niños focales (17 alumnos) mostraron ajuste, mientras que el 29.2% (7 niños) se encontraron desajustados. 10 de los 12 niños REG cubrieron los criterios de ajuste, y sólo 7 de los 12 niños con NEE fueron calificados como ajustados.

Con relación al RAc, evaluado por el IDEA, el 47.1% de los niños ajustados (8 niños) se ubicaron en el percentil 20 y el 35% (6 niños) en el percentil 40. De los 7 niños desajustados, 5 de ellos (71.4%) se ubicaron en el percentil 20, 4 de los cuáles fueron focales con NEE.

Discusión

Este estudio se realizó para analizar el ajuste social y académico de niños con NEE en el contexto de la enseñanza regular y para aportar información sobre el proceso de integración educativa de niños con requerimientos de enseñanza especial. La estrategia metodológica, que consistió en comparar niños y grupos focales de una muestra de salones de integración, permitió establecer similitudes entre los niños apareados (REG-NEE) con relación al rendimiento académico y tres variables sociales (ES, RDA y AS). Igualmente, hizo posible marcar diferencias entre los alumnos focales y el resto de los estudiantes regulares de los salones de integración.

La evidencia obtenida apoya la primera hipótesis, cuya premisa fue que los niños con NEE presentan un nivel de RAc inferior al de sus pares regulares en los salones de clases de inclusión educativa. Los datos reportados de la aplicación del IDEA muestran una diferencia significativa a favor de los niños focales regulares de 18.7 puntos porcentuales y mayor a 25 puntos en el estándar de los salones de integración evaluados. Estos hallazgos son entendibles en la medida que los niños participantes con NEE eran estudiantes con “problemas de aprendizaje” cuyo principal indicador es el bajo logro y la presencia de

dificultades en el desempeño de áreas académicas (Hallahan, Kauffman & Lloyd, 1999), y debido a que los alumnos con necesidades de educación especial incorporados en el sistema regular no reciben algún tipo de entrenamiento propedéutico, aunque sí ajustes curriculares que pretenden que el alumno avance escolarmente a su propio ritmo (Secretaría de Educación Pública –SEP-, 2002). La principal dificultad de un estudiante con bajo rendimiento académico de entrada, es la carencia de repertorios prerrequisito ligados a los programas de instrucción (MacMillan, Gresham, & Fortness, 1996), ya que aleja al estudiante de la posibilidad de instruirse a la par con sus compañeros de aula, además de establecer demandas adicionales al maestro y el contexto de enseñanza (Zigmond, Levin & Laurie, 1985). El éxito en tareas académicas demanda un dominio del 70-85% en las habilidades básicas y tópicos de aprendizaje, lo que representa un indicador mínimo para predecir el éxito en el desempeño de una tarea particular (Gravois, Rosenfield & Vail, 1999).

El bajo rendimiento mostrado por los estudiantes con NEE sugiere la necesidad de hacer ajustes a la enseñanza, previos a la inclusión y durante el ejercicio de los programas curriculares, para promover integración académica de inicio y facilitar el aprendizaje continuo a lo largo del ciclo escolar. Coleman, Webber y Algozzine (1999) mencionan que aún con el uso de “prácticas inclusivas”, algunos estudios han encontrado efectos no significativos en el RAc de muchos de los estudiantes integrados, y que la mitad de los estudiantes en salones de enseñanza regular no mejoran su ejecución académica. Este hecho atribuye especial importancia al dominio del aprendizaje en el proceso de ajuste e integración educativa de los niños con discapacidad en el contexto de enseñanza regular.

La segunda hipótesis del estudio propuso que los niños con NEE mostrarían mayores dificultades de ajuste social que sus pares regulares apareados. Los datos obtenidos indican que no existen diferencias sustantivas y estadísticamente significativas entre ambos grupos de sujetos focales (NEE-REG) en la evaluación del estatus social (ES), relaciones de amistad (RDA) y aceptación social (AS); no obstante, las diferencias se hacen aparentes al contrastar a los niños focales con los estándares de los salones regulares evaluados.

El perfil sociométrico de los estudiantes focales (con y sin NEE) se distribuyó principalmente en las categorías de “promedio”, “rechazado” e “ignorado”, en forma similar a lo encontrado por Stone y La Greca (1990) quienes reportan que más del 50% de los niños con problemas de aprendizaje se ubican en el estatus social de “rechazado” y de “ignorado”, mismas que han sido identificadas como categorías de riesgo por sus características sociales presentes y de predicción futura (Wentzel & Asher, 1995). La alta vulnerabilidad que presentan los niños con estos perfiles sociométricos los hace propensos a desaprobación social en el contexto escolar. Por una parte, las dificultades conductuales de los niños rechazados, que se caracterizan por una alta tasa de comportamiento perturbador, impulsividad, proclividad a violentar reglas y una alta tendencia a mostrar comportamiento violento (Wentzel & Asher, 1995), da lugar a que este tipo de alumnos se muestren con mayor antipatía y menor aceptación por sus pares y maestros que otros compañeros de salón de clases, situación que se relaciona con altos riesgos en el desempeño académico y en abandono escolar (Parker & Asher, 1993). Por otra parte, los niños “ignorados” tienden a mostrarse menos interactivos socialmente, se aíslan de sus compañeros mostrando poco juego prosocial y pocas conductas de integración hacia sus compañeros (Coie & Dodge, 1988). Las desventajas de índole sociométrica y académica que muestran la mayor parte de los niños focales de este estudio sugiere la necesidad de replicar los procedimientos en otros salones de integración para ratificar la condición social que presentan los niños con NEE que se incorporan al sistema de enseñanza regular; además del requerimiento de introducir otras fuentes de datos como los derivados de registros observacionales y de auto-descripción (e.g., Coie & Dodge, 1988; Santoyo & Espinosa, 2006), para validar con mayor precisión la condición social que guardan estos niños en referencia al grupo.

Los datos de RDA mostraron que más del 40% de los niños focales no tuvieron amigos por nominación recíproca (situación que afectó en mayor grado a los niños con NEE), y que más de la mitad sólo registraron un amigo. Consistente con estos resultados, el registro del número de amigos sin correspondencia (unilaterales) hizo notable la baja aceptación que tuvieron los niños focales en el grupo, ya que la tercera parte de los alumnos observados registraron cero menciones de mejores amigos y otra tercera parte solamente tuvieron una mención. La importancia de estos resultados se relaciona con el efecto protector que proporciona la intimidad de la amistad que permite al niño hacer frente a situaciones de adversidad social (Criss et al. 2002). Si un niño carece del beneficio que da la presencia de un amigo íntimo le será difícil amortizar el impacto del rechazo en el ajuste socio-conductual (Cillessen, IJzendoorn, Lieshout, & Hartup, 1992), ya que no contará con el recurso del apoyo social que le provee asistencia para la confrontación ante situaciones de estrés derivado de situaciones sociales y académicas (Buhmester, 1990).

Los datos obtenidos por la aplicación del procedimiento de nominación de 3 mejores amigos permitió identificar diferencias entre los niños focales y el resto de sus compañeros de las aulas de integración; sin embargo, la instrumentación de esta técnica muestra algunas desventajas que pueden ser resarcidas en otros estudios. En primer lugar, las redes sociales que se basan en relaciones filiales de amistad pueden contemplar vínculos entre más de tres miembros. A este respecto, Cairns, Leung, Buchanan, & Cairns, (1995) reportan que niños de cuarto grado, mediante un procedimiento de recuerdo libre, tuvieron en promedio 3.8 amigos recíprocos y 4.9 amigos en séptimo grado. La restricción impuesta por la nominación limitada de amigos impide la identificación de otros posibles nexos de amistad en el grupo. En segundo lugar, la posibilidad de considerar otras fuentes de información, como las provistas por los maestros, compañeros, y padres (e.g. Coie & Dodge, 1988), además de aportar información adicional y variar los métodos de registro para calificar las mismas relaciones, permite confiabilizar los datos proporcionados por el niño. En tercer lugar, el empleo de métodos de observación directos en diversos escenarios (e.g. Vaughn, Colvin, Azria, Caya, & Krzysik, 2001) aparte de suplementar la información verbal obtenida por medio de procedimientos de nominación, da lugar al análisis de diversas categorías de interacción relacionadas a la definición del fenómeno de observación. La información derivada del empleo de estos recursos podría enriquecer el análisis de las relaciones de amistad en alumnos con NEE en la enseñanza regular y sugerir formas alternativas para su promoción.

La calificación de AS no mostró diferencias significativas entre los alumnos focales, encontrándose que en su mayoría se ubican en un nivel de aceptación media en referencia a los datos estandarizados del grupo. Esta condición permitiría suponer que en la misma proporción los niños deberían cubrir los criterios de ajuste en correspondencia a su estatus social y relaciones de amistad; no obstante, al cotejar individualmente los resultados de las variables sociales evaluadas se observa que cerca de un tercio de los alumnos focales pueden ser identificados como desajustados, lo que indica que no necesariamente los niños con un nivel de aceptación alta o media tienen un alto estatus social o un mayor número de amigos en el grupo. Este hecho confirma que la distinción entre aceptación en un grupo y otras medidas de relación social (e.g., amistad) debe ser preservada, como ha sido sugerido por Parker y Asher (1993).

El uso de criterios para calificar ajuste socio-académico hicieron evidente que una alta proporción de niños participantes con NEE son altamente vulnerables, ya que el 40% de ellos fueron ubicados como desajustados. Una posible explicación tiene que ver con los bajos niveles de entrada en repertorios escolares, debido a que 4 de los 5 niños desajustados con NEE se ubicaron en el percentil 20 con relación al PGC, lo que sugiere que el desempeño escolar da contexto o contribuye al desarrollo de habilidades requeridas para el ajuste social en la escuela.

La tercera hipótesis propuso que las condiciones de aceptación o rechazo social no varían significativamente en el mediano plazo. Aun cuando estadísticamente se observó que los niveles de estabilidad entre los dos cortes de evaluación en las medidas de ES, Amigos, y AS no resultaron significativos, los valores relativos señalan que en el caso del ES, 5 de los 12 niños con NEE (42%) repitieron su condición sociométrica de 6 meses atrás, y que 4 de los 8 niños REG (50%) se mantuvieron sociométricamente estables, siendo las categorías de promedio, rechazado e ignorado las que mostraron mayor estabilidad. Estos datos confirman las observaciones de Coie & Kupersmidt (1983) y Newcomb & Bukowsky (1983) quienes señalan que la condición de rechazo es altamente estable implicando riesgos de integración presente y de aceptación futura en un grupo y sobre las posibilidades de cambio en los niños con otras condiciones de estatus social que se vuelven menos resistentes al cambio, como es el caso de los niños “ignorados”.

La estabilidad en las nominaciones de amigos recíprocos (40%) discrepa de la permanencia reportada por Berndt et al. (1986) quienes consignan un 69% de estabilidad, a seis meses, en la identificación de amigos recíprocos. En nuestros hallazgos, los 8 niños focales que se mantuvieron en el número de nominaciones, 5 de ellos conservaron el único amigo identificado previamente y 3 de ellos (con NEE) permanecieron sin nominaciones recíprocas de mejor amigo. En los alumnos focales restantes, la baja estabilidad temporal muestra que la mayoría de los niños se mueven entre la pérdida de amigos, sin la protección social que esto conlleva, y la ganancia, en su mayoría, de un amigo en comparación a lo observado en el corte 1.

Los resultados obtenidos, aun cuando presentan la limitación de la muestra por el pequeño número de los alumnos que la integraron, y por ende no pueden ser generalizados, sugiere la posibilidad de hacer otros estudios con el ajuste metodológico en la muestra y en la adecuación instrumental, para continuar con el análisis de la condición que guardan los niños con necesidades educativas que son incorporados en el contexto de la enseñanza regular y para conocer de manera más objetiva las posibilidades que ofrece la integración educativa.

Como corolario del análisis expuesto, en la conformación del diseño del presente estudio se consideró adecuado el empleo de una metodología sociométrica “clásica” a la luz de muchos de los hallazgos en el campo y su valor para la replicación de los datos encontrados; sin embargo, es oportuno hacer mención que los procedimientos sociométricos como medio de identificar la posición social relativa de un individuo en un grupo particular presenta algunas limitaciones, sobre todo si se considera que todas las relaciones sociales se derivan de características específicas del medio en donde se expresan; que estas no necesariamente se ajustan a condiciones estandarizadas; y que difícilmente pueden verificarse por medio de procedimientos de nominación individual.

Un problema de carácter metodológico en los procedimientos de nominación sociométrica es la limitación que se impone al restringir el número de opciones de selección (casi siempre 3) para calificar la aceptación de un miembro del grupo (o nombrar a los mejores amigos) y al establecer las nominaciones negativas como una condición impuesta por el procedimiento para señalar el rechazo hacia sus compañeros. Esta condición permite identificar, al menos, dos cortapisas derivadas del procedimiento. En primer lugar, la restricción de las posibilidades de elección libre para determinar tanto el número de personas afines como las características de las relaciones sociales entre ellas. La segunda, es el problema de carácter ético que se deriva de la elección obligada de los pares en rechazo, debido a que muchas veces los miembros del grupo se ven forzados a nombrar a compañeros que no necesariamente carecen de aceptación por quien los nombra. Santoyo y Espinoza (2006) refieren el empleo de la técnica de “roster –

rating-“como procedimiento alternativo, en el que un niño califica en una escala de 5 o 7 puntos a sus pares ante una lista de compañeros, subsanando de esta forma el problema de la elección forzada.

Creemos que estudios ulteriores se verían beneficiados con el empleo de métodos o procedimientos de sistemas observacionales (e.g., los mapas socio-cognoscitivos compuestos, Cairns et al. 1995; o los procedimientos de sociometría conductual descritos por Santoyo y Espinoza,, 2006) que permitan un mejor seguimiento de los sujetos focales, principalmente en la identificación y operacionalización de variables interactivas de carácter social, máxime si una de las extensiones de este tipo de estudios es la identificación funcional de los factores relacionados al desajuste del alumno en relación a las redes sociales en las que se pretende integrar normativamente a los individuos con necesidades educativas especiales.

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Reseña V Seminario Internacional sobre Comportamiento y Aplicaciones, SINCA (Ciudad de México 2015)¹

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Han pasado ya 8 años desde que un grupo de investigadores de la Universidad de Guadalajara, México gestaron la idea de un espacio académico para la difusión y discusión de trabajos en el área del análisis de la conducta donde los jóvenes investigadores fueran protagonistas. Con una declaración de principios básicos, que tiene como objetivo favorecer el intercambio académico y evitar intereses turísticos o lucrativos, se dio origen al I Seminario Internacional sobre Comportamiento y Aplicaciones (SINCA) 2008 en Guadalajara.

Desde su aparición hasta el inicio del pasado año, se habían realizado cuatro seminarios que contaron con Guadalajara y Ocotlán en Jalisco, y Hermosillo, Sonora, como sedes, y con importantes investigadores nacionales y extranjeros como invitados. Durante este tiempo, el seminario ha ido creciendo en diferentes aspectos: en su Comité Organizador, audiencia, instituciones participantes, número de actividades y reconocimiento entre los investigadores del área.

En noviembre de 2015, la V reunión del SINCA se llevó a cabo por primera vez en la Ciudad de México, en las instalaciones de la Unidad de Posgrado de la Universidad Nacional Autónoma de México (UNAM), con especial apoyo del posgrado en Psicología de dicha universidad.

En la Facultad de Psicología de la UNAM se realizaron las actividades pre-congreso, conformadas por la videoconferencia “Aproximaciones al estudio de la conducta humana compleja a partir del condicionamiento pavloviano” a cargo de Diana Delgado de la Fundación Universitaria Konrad Lorenz (Colombia) el lunes 9 de noviembre, y el mini curso taller de Análisis de datos y la conferencia magistral Memoria espacial en animales: datos y teoría, impartidos por François Tonneau de la Universidade do Pará (Brasil) el martes 10 de noviembre. Dichas actividades fueron el preámbulo perfecto para este evento.

El miércoles 13 de noviembre tuvo lugar la ceremonia de inauguración, dirigida por Vladimir Orduña. Durante la ceremonia hicieron parte del presidium Héctor Martínez, miembro fundador del Comité Organizador, Oscar Zamora, miembro del Comité Organizador sede, Armando Machado, Presidente Honorario de esta edición, y Juan José Sánchez Sosa, Coordinador del Posgrado en Psicología de la Universidad Nacional Autónoma de México. Ésta estuvo seguida por la conferencia magistral a cargo del presidente honorario Armando Machado, quien expuso a los asistentes su hipótesis de que los gradientes de generalización temporales pueden combinarse para producir formas complejas de comportamiento.

El programa del evento estuvo integrado por 52 trabajos libres, 2 conferencias magistrales, 12 simposios, 7 conferencias invitadas, 67 carteles, 2 conferencias invitadas pre-congreso, y un taller pre-congreso. Los trabajos incluyen autores pertenecientes a 39 instituciones, de las cuales 14 son internacionales.

Las conferencias invitadas estuvieron a cargo de Aaron Blaisdell, Mario Treviño, Germán Gutiérrez, Francisco Sotres, Germán Palafox, Ángel Tovar y Alejandro Segura, siendo éstos últimos, los investigadores jóvenes invitados en esta ocasión. Ángel Tovar destacó las ventajas de los modelos

¹ La referencia de este artículo en la web es: <http://conductual.com/content/resena-v-sinca>

neurocomputacionales al momento de generar descripciones sólidas y descripciones precisas acerca de fenómenos cognitivos y conductuales, lo cual ejemplificó con una tarea experimental aplicada a individuos con síndrome de Down y un modelo desarrollado en su laboratorio. Por otro lado, Alejandro Segura presentó su trabajo en el desarrollo de nuevos protocolos experimentales para evaluar y modelar las propiedades de entornos cooperativos en ratas y los resultados que hasta el momento ha obtenido.

En esta oportunidad el SINCA abrió dos espacios exclusivos para carteles, en los cuales se presentaron 67 trabajos. En ambos espacios, los autores tuvieron la oportunidad de compartir su trabajo con un amplio público, en discusiones que se prologaron más allá del tiempo previsto.

El evento contó con la participación de más de 350 inscritos, de los cuales, al igual que en eventos previos, se desatacó la nutrida participación de los estudiantes de pregrado de la Universidad de Sonora, quienes ya son un público habitual de este seminario. Adicionalmente, contamos con la invaluable colaboración de 20 estudiantes de la licenciatura en Psicología de la UNAM que hicieron parte del Comité de Apoyo.

La ceremonia de clausura estuvo precedida por la conferencia magistral de Juan José Sánchez Sosa, quien ofreció a la audiencia un panorama acerca de los grupos que en México realizan intervenciones conductuales en humanos basadas en evidencia empírica. Vladimir Orduña dirigió la ceremonia de clausura y nos acompañaron en el presidium Héctor Martínez, Oscar Zamora, Carlos Aparicio, François Tonneau y Julio Varela.

Además de la altísima calidad académica del evento, durante la ceremonia se resaltó la fortuna de poder reunir de nuevo este año a todos los miembros fundadores del seminario.

Continuando la tradición de las ediciones anteriores del SINCA, en ésta se presentó el Cuarto Volumen de la obra Estudios sobre comportamiento y aplicaciones, el cual cuenta con diez capítulos de diferentes temáticas, que nos dan un panorama de las áreas de investigación de los 27 autores, nacionales y extranjeros, que contribuyeron a esta obra, cuya presentación parcial se hizo en trabajos libres. El libro se publicó con la colaboración de la Universidad de Guadalajara y la UNAM.

Ponentes y asistentes gozaron de un espacio para compartir y discutir en torno a las tendencias actuales en la psicología experimental

Al final quedó claro que los objetivos del seminario se cumplieron de nuevo en esta edición

Reseña del IV Congreso Internacional SAVECC de Análisis Funcional del Comportamiento ¹

Francisco García-Torres ²

Francisco J. Alós

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El Rectorado de la Universidad de Córdoba ha sido el escenario donde los días 26, 27 y 28 de Noviembre de 2015 se ha celebrado el IV Congreso Internacional SAVECC de Análisis Funcional del Comportamiento, organizado por la Sociedad para el Avance del estudio Científico del Comportamiento (SAVECC) y ABA-España junto a la Universidad de Córdoba.

Este Congreso sucede al III Congreso de Análisis Funcional del Comportamiento SAVECC celebrado en la Universidad de Huelva los pasados 18-20 de Septiembre de 2014 y cuyo éxito condujo a la convocatoria de un IV Congreso SAVECC un año después en Córdoba.

Al Congreso asistieron unas 150 personas y se presentaron más de un centenar de trabajos en las modalidades de comunicación oral y de póster. Los campos temáticos abarcados han sido amplios, sin embargo, estas investigaciones podrían ser agrupadas en las siguientes categorías: intervenciones aplicadas a la Psicología Clínica en adultos o en niños y adolescentes, investigaciones básicas en humanos y animales, revisiones conductuales de problemas conceptuales y finalmente, un apartado, que merece una especial consideración, denominado: nuevas propuestas, desde el punto de vista conductual, para antiguos problemas psicológicos. Creemos, que dicho Congreso ha combinado, en su justa medida, trabajos de índole teórico-experimental y aplicado; aspecto que ha tenido una excelente acogida por los asistentes.

La procedencia de los ponentes ha sido variada, sin embargo, en este punto debemos reseñar la dimensión internacional de ellos, en especial se ha de destacar la asistencia de investigadores relevantes de la Universidad de Guadalajara (México), la Universidad Autónoma de Aguascalientes (México) y la Universidad de Minho (Portugal). Además de ponentes de toda España tanto de Universidades públicas como privadas, por ejemplo: la Universidad de Sevilla, Huelva, Almería, Málaga, Murcia, Madrid, UNED, Córdoba, etc. Una especial contribución al Congreso ha provenido de los trabajos presentados por un abanico relevante de diferentes profesionales procedentes de ámbitos de trabajos tanto públicos como privados.

Es necesario destacar la gran calidad científica y metodológica de los trabajos que se presentaron al Congreso, en cualquiera de las modalidades. Ello ha sido fruto de los esfuerzos del comité científico para ofrecer a los asistentes un espacio, en el que la información científica presentada fuera de la más absoluta relevancia, y por supuesto, acorde a los objetivos de las entidades organizadoras, que no eran otros que divulgar el estudio científico del comportamiento.

El Congreso contó, además, con ponentes invitados de reconocido prestigio, como el Dr. Santiago Benjumea de la Universidad de Sevilla que impartió la conferencia inaugural que tuvo como título: “Un análisis conductual del análisis de la conducta”, el Dr. Javier Virués de la Universidad de

¹ La referencia de este artículo en la web es: <http://conductual.com/content/resena-iv-congreso-internacional-savecc>

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Manitoba (Canadá) y presidente de ABA-España, que impartió la conferencia titulada: “Certificación de la Behavior Analyst Certification Board. Qué es, para qué sirve y cómo conseguirla”, y finalmente la conferencia de clausura, a cargo del Dr. Luis Valero de la Universidad de Málaga, titulada: “La replicación como base del método científico: ¿Qué pasa en Psicología?”.

Al igual que en ediciones anteriores, un hecho que merece ser destacado es que una gran parte de los trabajos presentados a este Congreso han sido realizados por estudiantes en formación o que aún no han terminado sus estudios, lo que supone un gran aliciente para la convocatoria de futuros congresos. Para finalizar nos gustaría destacar también la excelente acogida que este evento ha tenido entre los profesionales en activo, lo que indudablemente es una contingencia de reforzamiento para los organizadores, lo que presumiblemente tendrá un efecto de fortalecimiento de la conducta de organizar nuevas actividades, formativas y congresuales, en el futuro inmediato.