

Truncated Listening in ADHD Preteens with Auditory Processing Disorder: A Case Study in Behavioral Compliance Training Using Evoked Response Arousal Plus Sensitization

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ABSTRACT

Auditory processing disorder (APD) is frequently assigned to preteens who present with distractibility, inconsistent responding, and difficulty following instructions. However, emerging evidence suggests that many of these cases reflect behavioral patterns more consistent with attention related conditions such as ADHD rather than true sensory perceptual deficits. This paper proposes a behavioral reconceptualization of these presentations as truncated listening—a pattern in which the child disengages from parental instructions due to long term desensitization to repeated prompts, escalated parental volume, or chronic overexposure to ineffective instructional practices. In this model, the issue is not impaired auditory perception but weakened stimulus control: parental instructions no longer function as salient cues because the child has developed high tolerance to them. We further propose that restoring instructional salience requires sensitization, achieved through controlled, mild anticipatory arousal that increases the discriminative value of the parent’s approach and instruction. A changing criterion design was used to evaluate a three step instructional compliance intervention with two preteens previously labeled with APD. Criterion 1 required compliance to maintain access to an ongoing preferred activity. Criterion 2 required compliance to regain a briefly removed preferred activity. Criterion 3 introduced randomized parent return to deliver instructions, producing mild apprehension and increasing the evocative strength of the instructional cue. Across 14 days, both participants demonstrated systematic, criterion linked increases in compliance, culminating in high and stable responding under unpredictable instructional conditions. These findings support the conceptualization of “listening problems” in some preteens as operant histories of desensitization rather than auditory deficits, and they highlight the utility of controlled sensitization procedures for re establishing instructional control.

Keywords

Applied behavior analysis, ADHD, Auditory processing disorder, Procrastination, Compliance training, Child behavior.

Traditional neuroscience and developmental psychology research typically frame Auditory Processing Disorder (APD) as *neurophysiological differences* rather than behavioral causes. Studies using EEG, MEG, and psychophysical tasks show that individuals with auditory processing challenges often exhibit atypical neural responses to sound—such as delayed mismatch negativity (MMN; e.g., [1,2]), reduced amplitude of early auditory evoked potentials e.g., [3], or impaired rapid temporal processing e.g., [4]. These neural differences are interpreted as disruptions in how the auditory cortex encodes timing, frequency, and

prosodic cues [5]. From this perspective, downstream behavioral differences—like difficulty following verbal instructions, delayed language acquisition, or challenges with vocal affect recognition—are viewed as consequences of atypical sensory encoding rather than causes. For example, Cotter et al. [6] found that early auditory cortical responses predicted adaptive behavior scores, suggesting that sensory processing differences influence broader developmental outcomes. Similarly, Demopoulos et al. [7,8] demonstrated that rapid auditory processing deficits correlate with phonological awareness and vocabulary, reinforcing the idea that language-related behaviors emerge from underlying perceptual constraints. Sensory-cognitive models essentially claim deficits in auditory processing are due to attention allocation, or increased cognitive load, both reducing the reliability of perceptual input

and subsequent social communication. These traditional models generally avoid attributing auditory processing deficits to learned behavior; instead, they conceptualize behavior as an *observable manifestation* of deeper neurodevelopmental mechanisms.

In these accounts, behavior is primarily a readout of underlying sensory and cognitive processes [9]. Avoidance of noisy environments, failure to respond to name, or difficulty interpreting tone of voice are treated as manifestations of atypical sensory encoding and integration, rather than as learned patterns shaped by reinforcement histories e.g., [10-12]. A closer examination of auditory processing disorder targets the actual behaviors observed in children that consist of (1) reduced responsiveness to verbal cues (e.g., delayed or inconsistent response to names or instructions), (2) language-related challenges, including phonological errors, limited vocabulary, and reduced comprehension, (3) social-emotional difficulties, such as misinterpreting vocal affect or prosody, and (4) sensory-driven behaviors, including covering ears, leaving noisy settings, or engaging in problem behavior in response to auditory stimuli. Similarly, Proff et. al., [13] argued that sensory processing differences can alter how individuals engage with their environment, shaping opportunities for learning and social interaction. Wilde et. al., [14], reviewing rodent models of autism, also described behavioral manifestations of auditory differences—such as heightened startle responses and altered habituation—highlighting that sensory processing changes reliably map onto measurable behavior.

Much of the present analysis argues that many children diagnosed with auditory processing disorder are actually exhibiting *truncated listening*—a learned avoidance pattern shaped by punitive or escalating childhood contingencies. However, there remain important circumstances in which APD reflects *true neurological impairment*. The shared literature across neurology, neuropsychology, and applied behavior analysis helps clarify when auditory processing deficits arise from structural or functional brain changes rather than from learned avoidance or desensitization.

In cases of traumatic brain injury (TBI), for example, damage to temporal-parietal regions, corpus callosum pathways, or subcortical auditory relays can produce genuine deficits in auditory discrimination, sequencing and temporal integration. These impairments are not shaped by reinforcement histories but by disrupted neural conduction and impaired cortical processing. Children or adults with moderate to severe TBI may demonstrate slowed auditory comprehension, difficulty following multi-step instructions, or inconsistent responding even in highly supportive environments. In such cases, the behavioral presentation may superficially resemble truncated listening, but the underlying mechanism is neurological rather than avoidance-based.

Similarly, individuals with severe autism or profound neurodevelopmental disorders may show auditory processing differences rooted in atypical neural connectivity, sensory gating abnormalities, or reduced cortical synchrony. Here, the child's inconsistent responding to verbal instructions is not a function

of desensitization to caregiver tone but rather a reflection of atypical sensory integration. Behavioral interventions can still improve responsiveness, but the etiology is fundamentally neurodevelopmental rather than trauma-linked.

A third context in which auditory processing deficits emerge neurologically is progressive dementia, particularly in Alzheimer's disease and frontotemporal dementias. As cortical degeneration advances, individuals may lose the ability to decode speech sounds, maintain auditory working memory, or integrate verbal information across time. Their apparent "inattention" or "failure to follow instructions" is not avoidance but a direct consequence of neural deterioration. In these cases, behavioral strategies may support functioning, but they cannot reverse the underlying neuropathology. For example, Ruben's analysis of perseverative speech proposed [15] repetitive, looping, or non-contingent speech can occur in individuals with neurological conditions such as frontal-lobe injury, aphasia, or dementia. He emphasized that perseveration often appears uninfluenced by consequences, discriminative stimuli, establishing operations, or setting events, making it difficult to classify as purely behavioral. This ambiguity underscores the importance of considering both neurological and behavioral mechanisms when evaluating speech or auditory anomalies. Recognizing the distinction between these pathways is essential for accurate diagnosis, appropriate intervention, and the prevention of false positives like ADHD-predominately inattentive presentation [16].

The convergence of neuropsychological and behavioral research underscores that auditory processing difficulties arise from multiple pathways—some rooted in structural or functional brain differences, others shaped by learning histories, trauma, and patterns of aversive interaction. This dual heritage provides the foundation for the present paper's purpose: To reconceptualize many presentations of "auditory processing disorder" through the lens of trauma-informed behavior analysis [17,18]. This reconceptualization positions truncated listening not as a sensory deficit but as a learned avoidance pattern emerging from repeated exposure to punitive or escalating caregiver interactions (i.e., Behavioral Model of Truncated Listening). The model transforms instructional control into a coherent account of how children disengage (desensitize) and how they can be taught to re-engage (sensitize) with verbal cues. The discussion then turns to the ethical and theoretical implications of using mild evocative procedures and other forms of aversive control in compliance training. Finally, the paper presents a detailed case study demonstrating how the combined evoked response arousal plus sensitization method can effectively teach instructional compliance in preteens who exhibit oppositional noncompliance.

Behavioral Analysis of Auditory Processing Disorder

Behavioral analyses do not attempt to explain auditory processing at the level of neural circuitry. Instead, behavioral models prototypically interpret the same phenomena in terms of stimulus control, discrimination, and reinforcement history. Where traditional research describes "impaired rapid auditory processing"

it reframes auditory loss as weak or inconsistent control by specific auditory stimuli, particularly those that are brief, rapidly presented, or acoustically similar. For example, difficulty distinguishing between the phonetic sound “C” and “P” is conceptualized as a deficit in auditory conditional discrimination. The learner’s responses are not reliably controlled by the relevant features (voice onset time, intensity, etc.), leading to errors in receptive and expressive language. This framing immediately suggests intervention strategies to correct the mispronounced letters, such as systematic discrimination training, stimulus fading, errorless learning, and differential reinforcement, all to strengthen control by the critical auditory cues.

Behaviors such as covering ears, leaving noisy rooms, or engaging in aggression during loud events are interpreted as operant behaviors maintained by negative reinforcement (escape from aversive auditory stimuli) or automatic reinforcement (sensory regulation). The auditory environment functions as an antecedent (motivating operation and discriminative stimulus), and the consequences—reduction in noise, attention, or other changes—shape the probability of future responding. In this view, auditory processing differences are setting events [19-23] or establishing operations [24] that alter the value of certain consequences and the effectiveness of auditory stimuli as discriminative cues. Thus, what is described neurocognitively as “impaired affect recognition” (“no listening”) becomes, behaviorally, a set of trainable discriminations and response classes.

Instructional control and competing contingencies. Behavioral research shows that low-intensity aversive antecedents can increase compliance when implemented ethically and with clear contingencies. For example, the foundational work of Azrin & Holz [25] demonstrated that mild aversive stimulation—when carefully titrated—can increase adaptive responding without producing harmful side effects. Modern studies avoid aversive stimulation but retain the principle that slight increases in arousal can sharpen stimulus control. This position aligns with contemporary work on motivating operations [24,26], which shows that brief removal of a preferred activity or the introduction of uncertainty can increase the reinforcing value of compliance. These operations are not punitive; they simply increase the momentary effectiveness of the instruction as a discriminative stimulus. Moreover, research on instructional control e.g., [27] demonstrates that compliance increases when instructions are delivered under conditions that evoke cooperation and reduce reinforcement for noncompliance. When children have a long history of ignoring repeated prompts, the instruction loses discriminative strength—a phenomenon consistent with what this paper reframes as truncated listening.

Truncated listening may overtly appear as “not listening”, but it pertains to avoidance and escape behavior. Research on demand-fading, noncontingent reinforcement, and high-probability request sequences [28,29] show that altering the emotional or motivational context of an instruction can alter escape patterns: Patterns deteriorate and compliance increases. These procedures often involve brief, mild arousal—such as unpredictability or momentary

task removal—without causing distress. Research on variable-time schedules, intermittent demands, and contextual unpredictability e.g., [30,31] also show that unpredictability can increase attending and reduce problem behavior by disrupting rigid avoidance patterns. When applied gently, unpredictability functions as a salience enhancer, making the instruction more discriminable and reducing the child’s ability to pre-emptively avoid it. In addition, studies on escape-maintained aggression [32,33] revealed that competing contingencies—such as mild arousal paired with reinforcement for compliance—can reduce aggression by shifting the motivational landscape. When the instruction becomes more salient and the reinforcement for compliance becomes immediate and predictable, aggression loses its functional advantage. This supports the current behavioral model—that mild evocative arousal competes with the reinforcement history for noncompliance and allows compliance to re-emerge without punishment or shame.

Trauma-Informed Behavior Analysis

Trauma-Informed Behavior Analysis (TIBA) represents a conceptual paradigm to further understand avoidance-induced instructions. It integrates traditional applied behavior analysis with contemporary findings from trauma science, affective neuroscience, and relational psychology [34,35]. While applied behavior analysis has historically emphasized observable contingencies, TIBA expands the analytic lens to include the physiological and relational conditions under which behavior occurs. Trauma is conceptualized not as a static label but as a historical setting event—a long-term contextual variable that alters the function of antecedents, consequences, and discriminative stimuli [36]. This shift allows behavior analysts to interpret behavior not only as a product of immediate contingencies but also as an adaptation to environments where safety, predictability, and relational trust were compromised.

Within TIBA, the learner’s nervous system state becomes a central analytic variable. Trauma exposure can recalibrate the autonomic nervous system toward hypervigilance, which competes with the attentional and regulatory processes required for learning. Thus, TIBA emphasizes that regulation precedes instruction: A dysregulated learner cannot effectively engage with academic, social, or therapeutic demands. A second important trauma-related behavioral phenomenon addressed by TIBA is truncated listening. This is a reduction in attending to, processing, or responding to a speaker’s verbal behavior. From a behavioral perspective, truncated listening is not a deficit, but a functional adaptation shaped by the learner’s history. When past interactions with adults or authority figures were unpredictable, invalidating, or threatening, the act of listening itself may have acquired aversive properties. In such cases, the presence of a speaker, the tone of voice, or the initiation of instruction may function as conditioned aversive stimuli. These stimuli evoke escape, avoidance, or passive shutdown. TIBA interprets this not as “noncompliance” but as a trauma-conditioned shift in stimulus control.

Truncated listening can also emerge through desensitization to the listener. When a learner repeatedly experiences interactions

in which their voice is dismissed, their autonomy is overridden, or their emotional cues are ignored, the social stimulus of “the listener” loses reinforcing value. Over time, the learner may engage in reduced eye contact, minimal verbal responding, or selective inattention—not because they lack skills, but because the listener’s behavior no longer signals safety or reinforcement. TIBA frames this as a relationally mediated establishing operation: The learner’s history alters the value of social interaction and changes the probability of attending behavior. By integrating trauma-informed principles, TIBA provides a framework for restoring the reinforcing value of listening and relational engagement.

Truncated Listening Model

Truncated listening can be understood as a behavioral adaptation shaped by a learner’s history of exposure to unpredictable or coercive interpersonal environments. In early developmental contexts marked by aversive learning histories—such as repeated yelling, shaming, or rigid command-based interactions—adult verbal behavior frequently co-occurs with threat. Over time, these experiences establish a foundational setting event in which the presence of an adult speaker becomes a reliable precursor to aversive outcomes. At this stage, no overt behavioral topography is required; rather, the groundwork is laid for later patterns of avoidance and disengagement.

As these experiences accumulate, the learner’s nervous system begins to transform verbal stimuli into conditioned aversive stimuli. Through respondent conditioning and stimulus generalization, features of adult speech—tone, volume, phrasing, or instructional cadence—acquire aversive functions independent of the speaker’s current intent. What might be neutral or supportive verbal behavior in typical contexts becomes, for this learner, an antecedent that evokes autonomic arousal and anticipatory distress. Early behavioral indicators in the learner (listener) often appear subtle: gaze shifts, muscle tension, flinching, or a guarded posture. These responses reflect the learner’s attempt to reduce contact with stimuli that have historically signaled danger.

Once verbal stimuli reliably evoke distress, the learner’s autonomic arousal and neuroception of threat become central determinants of behavior. Even in objectively safe environments, the nervous system may detect threats based on prior learning rather than present contingencies. This heightened arousal narrows concentration, shifting processing away from semantic decoding (of objects, events) and toward rapid threat detection, due to metaphorical and metonymical extension [37]. Listening becomes effortful, aversive, and physiologically costly around any cues resembling the aversive instructions. Observable behaviors at this stage include rapid gaze shifts, fidgeting, scanning the environment, shutting down, or reduced verbal responsiveness—each functioning as an attempt to manage internal arousal.

As the aversive functions of verbal stimuli strengthen, the learner increasingly engages in avoidance and escape responses. These behaviors are negatively reinforced by the immediate reduction

in emotional arousal and decreased exposure to the aversive verbal stream. The learner may look away, “zone out”, talk over the speaker, change the topic, leave the area, or refuse tasks. A particularly important pattern is truncating the verbal stream, in which the learner hears only the beginning of a statement before disengaging. This is not a comprehension deficit, but a functional escape response shaped by the learner’s history.

Over time, these patterns manifest as observable listening deficits in instructional contexts. The learner may miss steps in directions, respond inconsistently, procrastinate, or appear inattentive despite having adequate receptive language skills. From a functional perspective, these behaviors are best understood as escape-maintained avoidance patterns rather than failures of understanding. The mismatch between the learner’s capacity and their performance often leads educators to misinterpret the behavior as auditory processing disorder or ADHD, predominately inattentive presentation. These patterns produce significant academic and social consequences. Work incompleteness, behavior referrals, and strained teacher–student relationships become common. Adults may respond with punitive or coercive strategies—raising their voice, repeating instructions more forcefully, or imposing consequences. These responses inadvertently strengthen the aversive functions of adult speech, tightening the avoidance cycle and deepening the learner’s disengagement. Over time, the learner may exhibit escalating non-listening, withdrawal, or broader school disengagement.

Despite these risks, several moderators and protective factors can disrupt this cycle. Relationship safety, predictable routines, clear expectations, and nonverbal supports reduce the aversive properties of verbal stimuli. Trauma-informed behavior plans and collaborative problem-solving approaches weaken escape reinforcement patterns by increasing predictability and relational attunement. As these supports accumulate, learners demonstrate increased engagement, improved eye contact, longer listening duration, and more consistent instruction following. In this way, truncated listening is not merely a deficit to be corrected but a functional adaptation that can be reshaped through environments emphasizing safety, predictability, and relational trust (see Table 1).

Method

Participants

Two male siblings, ages 10 (Child A) and 12 (Child B) participated along with their parents. The families originally sought therapy in private practice for chronic instructional noncompliance and oppositional behavior. Both youngsters attended public school in a Midwest metropolitan area that was demographically heterogeneous. They previously underwent psychoeducational evaluations to qualify for Attention Deficit Hyperactivity Disorder (ADHD, combined presentation), with comorbid auditory processing disorder. However, neither child currently took psychotropic medications nor met with a therapist focused on other individual issues. They attended regular classrooms

Behavioral Model of Truncated Listening

Table 1: A staged analysis illustrating how trauma-related learning histories transform verbal stimuli into conditioned aversive stimuli, evoke autonomic threat responses, and produce escape-maintained listening avoidance patterns, along with moderators that can disrupt this cycle.

Stage	Content	Function	Response Topography
Trauma and learning history	Exposure to unpredictable, inescapable aversive events (e.g., yelling, shaming, coercive commands).	Establishes a learning history in which adult verbal behavior often precedes or co-occurs with threat.	Not applicable at this stage (foundation of later behaviors).
Transformation of verbal stimuli into conditioned aversives	Tone of voice, specific phrases, instructional language, and “teacher talk” acquire aversive functions via respondent conditioning and generalization.	Adult speech becomes an aversive antecedent; verbal statements evoke autonomic arousal and anticipatory distress.	Early subtle disengagement (e.g., gaze shift, muscle tension), flinching, freezing, or guarded posture.
Autonomic arousal and neuroception of threat	Heightened physiological activation (fight/flight/freeze) when verbal cues are detected, even in objectively safe contexts.	Narrows attentional bandwidth and shifts processing from semantic decoding to threat detection; sustained listening becomes effortfully aversive.	Rapid gaze shifts, fidgeting, shutting down, scanning the environment, reduced verbal responsiveness.
Avoidance and escape responses to verbal stimuli	Verbal input triggers emotional overload; child attempts to reduce exposure.	Behaviors are negatively reinforced by immediate reduction in emotional arousal and decreased contact with aversive speech.	Looking away, “zoning out,” changing the topic, talking over the speaker, leaving the area, task refusal, truncating the verbal stream.
Observable listening deficits in instructional contexts	Missed steps in directions; inconsistent response to spoken instructions despite adequate basic language skills.	From a functional perspective, these are escape-maintained avoidance patterns rather than comprehension failure.	Missing multi-step directions, appearing inattentive or oppositional, inconsistent responding, slow initiation, partial compliance.
Academic and social consequences	Work incompleteness, behavior referrals, strained teacher–student relationships, reinforcement of negative expectations (“this child never listens”).	Punitive or coercive responses strengthen the aversive functions of adult speech, tightening the avoidance cycle.	Increased avoidance, escalating non-listening, withdrawal, oppositional behavior, school disengagement.

with a standard curriculum. Academic grades achieved between A’s and B’s, respectively. The school did not report behavior incidents of noncompliance or oppositional behavior warranting suspensions, detentions, or expulsions. They participated neither in extracurricular nor community activities. Their parents also denied any history of medical, criminal, surgical, or head-trauma experiences. On pre-baseline ratings of noncompliance, the parents completed the Delis Rating of Executive Functions (D-REF parent Rating) [38] and the Parenting Stress Index (PSI-4) [39,40]. High scores on the D-REF appeared in core indices of Behavioral Executive Functioning, Attention/Working Memory, Activity Level Impulse Control and Compliance/Anger Management. Commensurate high scores appeared on the PSI-4 in domains of Reinforces Parent, Distractibility/Hyperactivity, and Adaptability. Higher scores on both indices predict frequent and severe maladaptive or aggressive reactions and noncompliance troubling the parent. The PSI-4 further indicates repeated failures using conventional (and some behaviorally based) discipline methods for compliance motivation.

Behavior observations included topography and functionality of noncompliance. Topographical characteristics included (a) verbal aggression (e.g., yelling, tantrums, arguing, debating, pleading for delays, name-calling, threatening, self-effacing statements), (b) physical aggression (e.g., hitting, kicking, pushing, pinching, scratching, property destruction), and (c) task refusal (ignore instructions, delay/avoid compliance). Functional or operational explanations identified antecedents, behaviors, consequences, motivators (motivating operators), setting events, media of contact,

and reactional biography [41,42]. For example, Child A yelled at his father, in anticipation of his father’s instructions; this eruptive anger provoked reciprocal anger in the father. The two-minute verbal exchange before dinner ended in the father “abandoning” the instructional request made. Child B reacted angrily in response to the first words of instructions uttered by his mother, instantly intercepting and silencing her behaviors.

In both cases, pre-emptive and reactive anger increased and maintained strength due to negative reinforcement (i.e., avoidance or escape from instructions). Both sets of parents observed the momentum of child angry responses after their 3rd or 4th tonal (decibel) escalation. The first two decibel levels were mild to low (0 to 70 dB, safe, every sound) and followed by third and 4th moderate to high ranges (70-85 dB or 85-100 dB, annoying, long exposure, painful hearing). Both children did not respond to mild to low decibel levels. They did respond to moderate to high rages with two reactions. First, the children flinched (visceral effect-stomach tightening, heart racing, breathing changes, muscle tension, sweating, shaking or trembling). Second, adrenaline surge produced rapid rates of compliance, accompanied either by anger and yelling, or complaining. Both parents reported their higher decibels (moderate to high dB or “yelling”) were “necessary” to activate instructional compliance. That said, parents’ yelling came under the stimulus control of both a child’s noncompliance (i.e., the antecedent), and child’s ultimate compliance (i.e., positive reinforcement). That is, the child listening and complying with the parent’s request (after yelled at) increased the parent’s future probability of yelling under similar circumstances. In

effect, delayed compliant responses signified desensitization to the parents' lower decibel rates, whereas emission of compliant responses only followed higher decibel rates.

Procedure

Clinical intervention consisted of a multi-componential behavioral model originally conceptualized by Ruben [43-45]. Three steps taught to the parents consisted of (1) delivery of soft-spoken instruction while the child engaged in competing play behavior offering reward retention for compliance, (2) 2-3 minutes later, repeat the soft-spoken delivery while temporarily removing the competing (reward) and offering immediately to return it contingent on compliance, and (3) repeating step #2 exactly on a random (variable interval) schedule. Steps followed three phases or criteria, each step occurring in one criterion. Verbal instructions were delivered in non-shaming, low-decibel, soft language. The same low decibel tone accompanied verbal instructions at every step. Procedurally, step 1 (Criterion 1) first entailed the parent to observe ongoing play or self-rewarding activity (e.g., playing with Legos). The parents stated the child can keep playing with the Legos if he does the task (moves his shoes from the hallway to his bedroom). If compliance occurred, verbal praise and affection were immediate. If the child had tantrums, argued, debated, or is non-responsive, the parent walked away. If the child ranted, argued, debated, or just uttered remarks, while also engaging in compliance, the parent ignored the unwanted remarks and praised the child only after the compliance occurred. Step 2 (Criterion 2) occurred 2-3 minutes later if noncompliance persisted. Parent approached the child playing and temporarily removed the rewarding object stating, "I will return this to you immediately if you move your shoes now". Again, angry or delayed reactions from the child were ignored, whereas compliance within a short latency of 1-2 minutes (from instruction) received praise and affection. Repeated noncompliance warranted Step 3. In step 3 (Criterion 3), parents approached the child and repeated verbatim the contingency and object removal given in Step 2. Non-response or angry responses prompted the parents to walk away. The parents returned to repeat Step 3 at varying and unpredictable time intervals (3 minutes, 5 minutes, 2 minutes, etc.).

Randomness, as discussed earlier, can invoke mild anticipatory anxiety in a child [46-48]. Uncertainty about future aversive events produces heightened awareness or hypersensitivity to ongoing and impending setting events, particularly if the setting events resemble the antecedent or consequent cues of a parent approaching the child. Anticipatory anxiety occasions both over-alertness (hypervigilance) and pre-emptive avoidant or escape behaviors; both responses functionally serve to eliminate visceral effects of hypersensitivity. Two scenarios ensued predictably like this: In between repetitions of Step 3, both children interrupted their play to "scout" for the parent's whereabouts or to "watch if the parent returned". Detection of the parent reduced or relieved the anxiety. The other scenario involved the child pre-emptively interrupting the parent as the parent began repeating the instruction (step 3, on a random schedule). Pre-emptive statements, for example, included the child saying, "Okay, don't tell me again, I'll

do the task right now" followed by immediate compliance. In both cases, praise and affection followed compliance.

Independent variables. Independent variables involved the three sequential steps of instructions evoking the children's behaviors (see above). Contingent social reinforcers (praise and affection) occurred for each compliance observed. The parent neither repeated nor escalated in giving the instructions, nor convinced or cajoled the children to comply with each step. Voice range of parent's delivered instructions always remained at low decibel levels. During the baseline phase, parents responded to the child as they did before treatment.

Dependent variables. Dependent variables of compliance were defined as: (a) initiation of the task within 1-2 minutes from the instruction (latency) and (b) approximation of task completion. *Approximation* means some but not all of the defining criteria of the task were met to receive praise and affection. For example, one child moved his shoes from the hallway into his bedroom, but not in the closet. Completion accuracy was less important for this study than was re-teaching sensitization and responsivity to low-decibel (parental) instructions. Recorded scores appeared on a data sheet during baseline observations and during instructional criterion phases. Daily frequency counts were sent by text to the author per day for tabulation. Plotted tabulations (graphs showing positive and negative trends) were sent to the parents by email as feedback on the parents' consistent performance and to reveal progress on the children's behaviors.

Design and Condition Sequence. A single-subject changing-criterion treatment design [49] occurred for both children exhibiting noncompliance. A changing-criterion single-case design is a behavioral intervention where the target behavior is gradually shaped by systematically shifting performance criteria over time. It is methodologically advantageous when increasing or decreasing behavior step-by-step, rather than all at once. One baseline (2 days) followed three consecutive treatment phases graduated by criteria changing performance (compliance) goals. Baseline involved 10 instructions for compliance under non-contingent (free-operant) conditions. Parents utilized the natural "discipline" of anger or yelling reported in their behavioral observations (see above). Criterion 1 involved 10 instructions for compliance contingent on continued access to the preferred or ongoing (rewarding) activity. Criterion 2 involved 10 instructions for compliance contingent on regaining a temporarily removed activity. Criterion 3 involved 10 instructions for compliance under randomized (unpredictable) parent return and instruction (mild anxiety) conditions. Criterion 1 (Days 3-6) required instructional compliance at 40% (4 of 10) for only one day. Criterion 2 (Days 7-10) required instructional compliance at 70% (7 of 10) for two consecutive days. Criterion 3 (Days 11-14) required instructional compliance at 90% (9 of 10) for two consecutive days.

Results

Observer reliability

Interobserver reliability was collected on at least 40% of all

observations in each experimental condition by having the parents observe different behaviors independently. Agreement was calculated on occurrences of the behaviors on an interval-by-interval basis. An agreement was scored when both observers scored the target behavior in a given interval. A disagreement was scored when one observer recorded an occurrence and the second observer did not. Interobserver agreement was calculated by dividing the number of agreements by the total number of observations. Observer-reliability results varied from a low of 86% to a high of 100%. The mean reliability for target behavior observations clustered around 90%. Limited reliability checks prevailed outside the training session.

Analysis of Data

Daily compliance data for both participants are presented across the 14-day study period, including 2 days of baseline and 12 days of intervention divided into three 4-day changing-criterion phases (see Figure 1). Each day consisted of 10 instructional opportunities. Baseline compliance scores ranged from 0 to 2 (0 to 20%) when parents used uncorrected (punitive) discipline, likely desensitizing the subject to verbal instructions. Compliance scores immediately rose in Criterion 1 to 4 of 10 (40% for at least one day) for both subjects. Frequency of compliance accelerated in Criterion 2, to 7 of 10 (70%) for three out of four days for each subject. Criterion 3 replicated and showed marked escalation of compliance to instructions, with subject A scoring 9 out of 10 (90%) for three of four days, and subject B scoring 90% for two of four days, as both met criteria. Neither of the subjects' instructional compliance scores dropped to baseline levels during Criterion 2 and 3.

Conclusions

The present case analysis highlights a central conceptual point: Many children labeled with “auditory processing disorder” may instead be exhibiting a pattern better understood as *truncated listening*—a learned avoidance response shaped by early punitive contingencies. Rather than reflecting a neurological deficit in auditory discrimination or sequencing, truncated listening appears to emerge when children repeatedly experience escalating parental tones, repeated instructions, or aversive consequences tied to noncompliance. Over time, these children become desensitized to the prosodic cues that typically signal urgency or importance in caregiver speech. What looks like inattentiveness or auditory processing failure is more parsimoniously explained as a trauma-linked avoidance pattern in which the child disengages early in the instruction sequence to escape or minimize anticipated conflict.

Within this framework, the two children in the present study demonstrated meaningful gains when exposed to a structured instructional sequence targeting *sensitization, evoked response arousal, and stepwise compliance training*. As each child learned to recognize and respond to the three sensitization steps, their compliance increased in accordance with shifting performance criteria. The data suggest that when children are taught to re-engage with caregiver vocal cues—and when those cues are paired with predictable, non-punitive contingencies—behavioral responsiveness improves even in cases previously attributed to auditory processing deficits. These findings support the argument that truncated listening is modifiable through behavioral

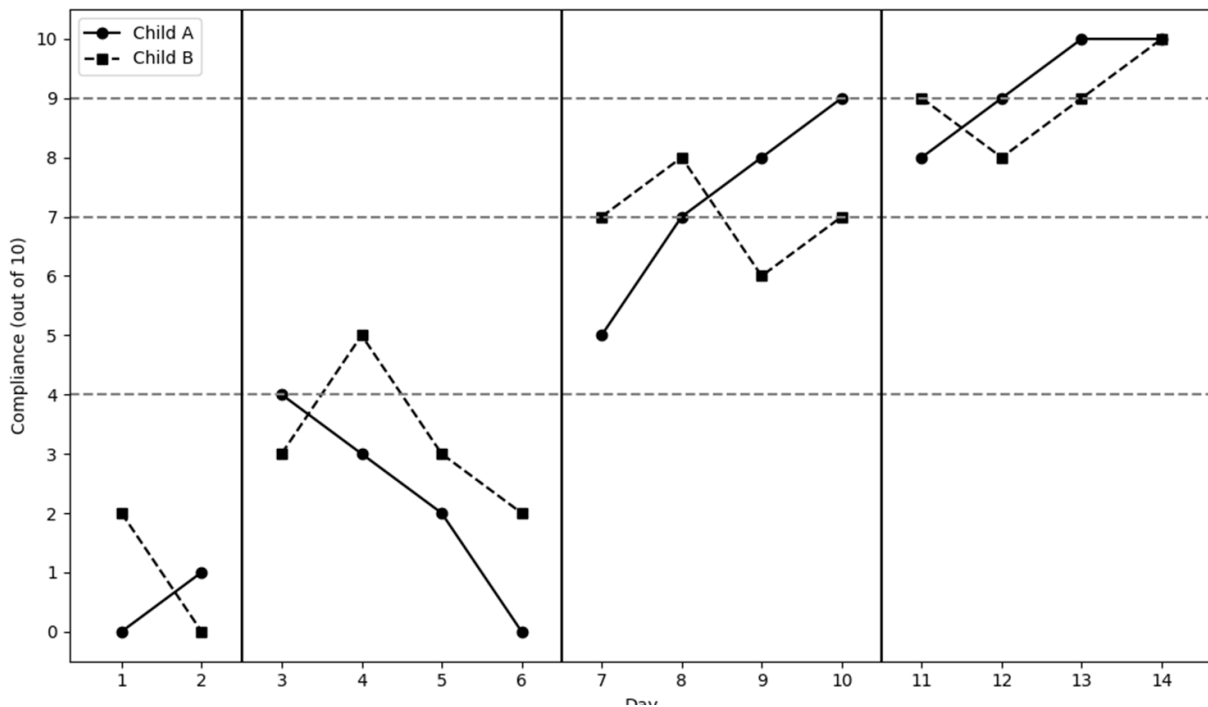


Figure 1: depicts graduated trends in compliance (out of 10 instructions per day) for two male subjects across phases from Baseline (sessions 1-2) to Criterion 1 (sessions 3 to 6), Criterion 2 (sessions 7-10), and Criterion (sessions 11 – 14).

mechanisms rather than fixed neurological limitations.

Several limitations must be acknowledged. First, the sample size was extremely small, restricting generalization beyond the two children described. Second, the participants did not report brain injury, severe autism, or other developmental disorders that might produce genuine auditory processing impairments; thus, the conclusions apply only to children without significant neurodevelopmental pathology. Third, the duration of training was limited, as is typical in case-study designs, lacking a generalization phase. Longer intervention periods may reveal additional patterns of maintenance, generalization, or relapse that were not observable here. Future research should expand the developmental range of participants, including adolescents and young adults, to determine whether truncated listening persists or transforms across maturation. Additional studies should also work to isolate the specific contribution of evoked response arousal from other avoidance-based mechanisms maintained by negative reinforcement. Finally, dissemination efforts are needed to help evaluators, school psychologists, and clinicians distinguish truncated listening from true auditory processing deficits. Improved diagnostic clarity may reduce false-positive ADHD-Inattentive presentations and prevent children from being misclassified when the underlying issue is a learned avoidance pattern rather than a neurocognitive disorder.

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