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# The Phenomenon of Creative Seeing as Discovered by Descriptive Experience Sampling: A Case Study

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THE PHENOMENON OF CREATIVE SEEING AS DISCOVERED BY DESCRIPTIVE  
EXPERIENCE SAMPLING: A CASE STUDY

By

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A thesis submitted in partial fulfillment  
of the requirements for the

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## Abstract

Descriptive Experience Sampling (DES) studies have found that people without known mental health conditions occasionally describe visual experiences that are distortions of reality. DES calls such visual-perceptual-distortion experiences *creative seeing*. Typically, participants don't realize that their perceptions are distorted until they note their descriptions, at which time they notice (with surprise) the discrepancy.

We describe "Rhea," a female adult (between 25 and 30 years old) DES volunteer participant. Her DES sampling happened to produce a high frequency of creative seeing; the degree of detail provided by DES allows us to describe the creative-seeing phenomenon with otherwise unobtainable detail.

The creative seeing phenomenon involves distortion in sensory perception, which are in some ways similar to visual hallucinations. To evaluate whether Rhea's distorted perceptions were signs of psychiatric disorder, we administered the Structured Interview for Psychosis-risk Syndromes (SIPS), a psychological assessment of precursors of psychiatric disorder, finding no evidence of such disorder.

Of specific interest here, Rhea responded "No" to the SIPS prompt assessing whether she sees things that others would not. That seems discrepant with a main finding of her DES sampling. These results indicate that DES might be more sensitive than retrospective interviews in investigating potential serious mental illness. On the other hand, these results may suggest that creative seeing is not related to severe mental illness or its precursors.

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## Chapter 1: Introduction

Descriptive Experience Sampling (DES; Hurlburt, 1990) aims to apprehend and describe a person's naturally occurring inner experience (sensations, thoughts, feelings, words, etc.). Participants are instructed in the use of a random interval beeper that they wear in their natural environments; they are instructed to pay attention to their inner experience that was ongoing before being interrupted by the beep. To serve as a reference to the experience during an upcoming "expositional" interview, participants are to jot down notes about the beeped experience and bring those notes to the interview (Hurlburt & Heavey, 2006). Based on direct recollection and constrained by the notes, or at least taking the notes into consideration, DES seeks to describe the beeped inner experiences with fidelity. By fidelity, DES participants and researchers work to describe the beeped experience itself—the nature and content of a moment of experience—and avoid describing anything else (theories, beliefs, and preconceptions about what is assumed to be present).

DES has occasionally encountered descriptions of experience such as this: "Liv" was walking to unplug her iPad. She sees the iPad on its edge, standing flat against the wall, but later she discovers that the iPad was actually leaning at an angle half against the wall—half hanging out into the doorway past the end of the wall. That is, Liv experienced herself as seeing the world as it is, but that seeing does not conform to reality and does not conform to what others would see in an identical situation. DES calls this kind of experience *creative seeing*. DES calls this "creative" to indicate that Liv has created this distortion of reality and to use a term that does not have pejorative connotations.

Creative seeing thus has three features: (a) a distortion of reality, (b) a perception apprehended as being of the world as the world is, and (c) a seen characteristic that others would

not see in identical situations. Noticing this kind of distortion requires an investigational method like DES. That is, noticing creative seeing requires close attention to ongoing experience *and* the immediate ability to compare that experience to external reality. One would need something (such as a beeper) to define a particular moment, something (such as the DES emphasis) to focus on experience and a process that happens quickly enough so that the external environment continues stable enough to be examined. You have to do all that in order possibly to get a glimpse of creative seeing. Even then, it is unlikely that creative seeing is detected—in most DES investigations, creative seeing is rare.

Thus, DES researchers are perhaps uniquely able to discover these distortions of reality, and it would be desirable to provide descriptions of these distortions with the fidelity to which DES aspires. But because creative seeing is rare, it would be advantageous to find a person who has these experiences frequently. By chance, we happened to conduct a DES investigation of “Rhea,” who, unlike most DES participants, experienced frequent creative seeing. That provided an opportunity to investigate Rhea as the subject in a case study that would explore the creative seeing phenomenon in ways that had not been possible. Our first aim will be to present the results of that exploration, including descriptions of the creative seeing phenomenon.

This case study used DES to obtain, high fidelity, natural-environment samples of Rhea’s inner experiences, including, frequently, creative seeing. That is, Rhea frequently said, at randomly selected moments, that she saw things that other people would not see. Such claims are often descriptions of visual hallucinations, a possible symptom of serious mental illness, so it would be natural to wonder whether Rhea’s creative seeings were instances of visual hallucinations and whether she had, or might be developing a mental illness. We explored that possibility by administering the Structured Interview for Psychosis Risk Syndromes (SIPS;



Miller et al., 1999). The SIPS is used to assess risk for or the presence and distress of symptoms of psychosis over a period of time by asking questions such as “Do you ever see things that others can’t or don’t seem to see?” (McGlashan et al., 2001, p. 18). It turned out that Rhea answered *No* to such questions, and subsequent questioning discovered that she understood that to be the correct answer to the questions. This was surprising, given that she had just completed the DES investigation in which she had said, repeatedly, that she *was* seeing things that other people would not see. Our second aim was to present a discussion of why this apparent inconsistency is not a contradiction.

## Chapter 2: Review of the Literature

### Visual Hallucinations in Community Samples

In 1989, a Dutch community sample of 914 adolescents aged 11-18 completed the Youth Self-Report scale (YSR; Achenbach, 1991) to examine the prevalence of auditory and visual hallucinations (Dhossche et al., 2002). Of particular interest here was YSR item #70 (“see things that other people think aren’t there”) as a measure of visual hallucinations; YSR items can be answered 0 = *Not true*, 1 = *Somewhat or sometimes true*, or 2 = *Very true or often true*.

Out of 914<sup>1</sup> adolescents, 19 (2%) self-reported visual hallucinations. Of these 19, 18 indicated that this was *somewhat or sometimes true* and one indicated this was *very true or often true* on item #70. A Total Problem Score is calculated using the sum of all items on the YSR. Of these same 19 adolescents, 10 (53%) had a high (above the 90<sup>th</sup> percentile) Total Problem Score on the YSR. That was a much higher Total Problem percentage than among those who did not report visual hallucinations (8%).

At follow-up 8 years later, 796 (86% of the 914 assessed with the YSR) participants, now young adults, were assessed using the Young Adult Self-Report scale (YASR; Achenbach, 1997), which has the same item #70. These same respondents were also assessed for DSM-IV Axis 1 diagnoses using the 12-month version of the Composite International Diagnostic Interview (CIDI), a structured interview with scoring diagnoses via computer (World Health Organization, 1992). Out of these 796 respondents, 12<sup>2</sup> young adults self-reported visual hallucinations (a score of 1 or 2 on item #70). Out of these 12, only one had reported visual hallucinations in 1989 as an adolescent. Six (50%) had some concurrent diagnosable DSM-IV

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<sup>1</sup> Dhossche et al. notes 19 out of 911 adolescents self-report visual hallucinations. However, the sample elsewhere in the paper is described as consisting of 914 adolescents. We cannot reconcile the discrepancy between 911 and 914.

<sup>2</sup> Dhossche et al’s Table 4 puts this number as 11, whereas in the text they use 12. We cannot reconcile that discrepancy.

Axis 1 diagnosis, a much higher percentage than among those who did not report visual hallucinations (17%). This suggests that self-reported visual hallucinations are not stable across development (Dhossche et al., 2002), but that self-reported visual hallucinations are important for current diagnosis of mental illness.

Poulton et al. 2000 traced 761 participants who were members of the Dunedin Multidisciplinary Health and Development Study, which followed (mostly) New Zealand-European children from 1972 to at least 2000. The 761 participants included participants who were assessed at age 11 and age 26. When participants were 11 years of age, child psychiatrists administered a structured interview (the Diagnostic Interview Schedule for Children; DISC-C, Costello et al., 1982); the DISC-C schizophrenia section asks 5 questions: “(1) Some people believe in mind reading or being psychic. Have other people ever read your mind? (2) Have you ever had messages sent just to you through television or radio? (3) Have you ever thought that people are following you or spying on you? (4) Have you heard voices other people can’t hear? and (5) Has something ever gotten inside your body or has your body changed in some strange way?” (Poulton et al., 2000, p. 1054) which were scored 0 = *no*; 1 = *yes, likely*; or 2 = *yes, definitely*. The five-item scores were summed; sum = 0 participants were called *control* ( $N = 673$ ); sum = 1 were called *weak* ( $N = 103$ ); and sum  $\geq 2$  were called *strong* ( $N = 13$ ).

Symptoms for the 761 participants were ascertained at age 26 by health professionals using the Diagnostic Interview Schedule for DSM-IV (Robins et al., 1995). Schizophreniform diagnoses at age 26 were related to symptom ratings at age 11; whereas only 2% of the 11-year-old *control* children met diagnostic criteria for schizophreniform disorder, 9.5% of *weak*-symptom children and 25% of *strong*-symptom children met those criteria (Poulton et al., 2000, p. 1056). Noteworthy in this study was that  $(103 + 13)/(673 + 103 + 13) = 15\%$  of all 11-year-

olds in this study were judged by child psychiatrists to have at least some psychotic-like symptoms, and these symptoms were substantially but by no means predictive of adult disorder. However, of relevance to the current study, of relevance to the current study, symptoms investigated by Robins et al. were primarily self-reported delusions rather than self-reported hallucinations.

Simon et al. (2009) examined help-seeking adolescents from a longitudinal cohort study aged 14-20 from referrals to an outpatient clinic for assessment of early psychosis. At baseline (T<sub>0</sub>), 84 participants were assessed, and at one-year follow-up (T<sub>1</sub>), 28 participants were assessed. Subclinical hallucinations were assessed using the Schizophrenia Proneness Instrument – Adult Version (SPI-A; Schultze-Lutter et al., 2007), which aimed to capture early-prodromal symptoms (Schultze-Lutter et al., 2007), and the Scale of Prodromal Symptoms (SOPS; Miller et al., 1999) along with its companion interview manual, the Structured Interview for Prodromal Symptoms (SIPS; Miller et al., 1999). The SIPS and its corresponding rating scale, the SOPS, aimed to capture late prodromal-state symptoms (Miller et al., 1999). Participants were assigned to the early-prodromal group for psychosis if they reported no current symptoms and (a) they reported at least one predictive basic symptom of psychosis (e.g., disturbances in thinking or perception) with an SPI-A score of at least 3; (b) they received any SOPS positive symptom score of 6 for reported symptoms lasting either less than one week; (c) they received a SOPS positive symptom score from 3-5 with reported symptoms occurring at least once a week, over the past month, and beginning in the past year; (d) they have a first degree relative with a psychotic disorder; (e) met DSM-IV criteria for Schizotypal Personality Disorder; or (f) had a 30% drop in Global Assessment of Functioning (GAF) score over the past month (Simon et al., 2006). Participants were assigned to the late-prodromal group for psychosis if they (a) scored at

least 3 on the SOPS for at least one negative symptom; (b) scored from 3-5 on the SOPS for at least one positive symptom; or (c) scored at least 6 on the SOPS for at least one positive symptom for at least one week (Simon et al., 2006). Both groups were analyzed together to examine the stability of subclinical hallucinations in a psychiatric adolescent population (Simon et al., 2009).

The SPI-A includes 12 items (14 sub-items) measuring subclinical hallucinations rated from 0 = *absent* to 6 = *continuously present and subjectively very distressing*; individuals with a rating of 1 to 6 on the subclinical hallucination items were included in the study (Simon et al., 2009). The SIPS manual and SOPS P4 items assess hallucinations with subclinical hallucinations differentiated from true hallucinations by the individual's ability to question the reality of the hallucinatory experience as well as the limited frequency, duration, and severity of the visual experience (Simon et al., 2009). Self-reported symptoms on the SOPS are rated from 0 = *absent* to 6 = *severe and psychotic*, with a hallucination considered subclinical if the P4 score is between 1 and 5 without disorganization and daily occurrence over one month (Simon et al., 2009).

Simon et al. (2009) found 77 adolescents self-reported hallucinations of any modality (i.e., auditory, visual, olfactory, etc.) at baseline. Of these 77, 30 adolescents (39%) reported visual hallucinations at T<sub>0</sub>. Of these 30 adolescents at T<sub>1</sub>, 7 (9%) reported full remission, 4 (5%) reported partial remission, and 7 (9%) reported no change in their visual hallucinations; data were missing for the remaining 12 (Simon et al., 2009). Therefore, at least  $(7+4)/30 = 37\%$  (probably an undercount because of the missing 12) of adolescents reporting visual hallucinatory experience reported some or full remission one year later, indicating that subclinical visual hallucinations may be a transitory phenomenon with discontinuation occurring after one year.

These results also suggest that the presence of subclinical visual hallucinations in adolescents may not be predictive of later development of psychosis or other severe psychopathology later in life.

Dominguez et al. (2009) examined whether there was continuity and transition of subclinical transitory psychotic experiences to clinical psychosis. Adolescents aged 14-17 (N = 845) were surveyed at baseline and 3 follow-up periods of approximately 1.5 (T<sub>0</sub>-T<sub>1</sub>), 3.5 (T<sub>0</sub>-T<sub>2</sub>), and 8.5 (T<sub>0</sub>-T<sub>3</sub>) years from baseline (Dominguez et al., 2009). Two symptom dimensions from the SCL-90-R (Derogatis & Cleary, 1977) were used to develop the SCL-Psychosis subscale used to assess participants from T<sub>0</sub>-T<sub>3</sub> (Dominguez et al., 2009). The SCL-Psychosis scale consisted of a 6-item paranoid ideation subscale to assess disordered thinking and a 10-item psychoticism subscale to assess overall and psychotic-like experience; items are scored from 0 = *not at all* to 4 = *extremely* (Dominguez et al., 2009). Participants were also assessed using the Munich-Composite International Diagnostic Interview (DIA-X/M-CIDI; Wittchen & Pfister, 1997), a comprehensive standardized diagnostic interview used to assess various mental disorders in accordance with the *International Classification of Diseases, Tenth Edition* (ICD-10; World Health Organization 1993) and *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV; American Psychiatric Association, 1994).

Dominguez et al. (2009) found that two-fifths (40%) of T<sub>3</sub> cases with psychotic impairment had involved T<sub>0</sub> reports of subclinical psychotic symptoms. This result is likely an underestimate as the SCL-90-R assesses symptoms over the past two weeks, which may create the possibility of underreporting psychotic-like experiences over larger bouts of time (Dominguez et al., 2009). There was also caused by uneven sampling intervals from T<sub>0</sub> to T<sub>3</sub> with a sampling interval between T<sub>2</sub> and T<sub>3</sub>, which may also potentially contribute to

underreporting of subclinical psychotic experiences (Dominguez et al., 2009). Despite potential underestimation, 40% of clinically relevant psychosis can be traced back to self-reported subclinical psychotic symptoms from adolescence to young adulthood, shedding light on the evolution of psychotic states in the general population (Dominguez et al., 2009).

McGlashan et al. (2001) examined growing research that psychosis exists long before characteristic manifestations and official diagnostic symptoms. Deteriorative processes are noticeably active 1 to 2 years before the onset of symptoms and 2 to 3 years following onset when symptoms reach a relatively stable plateau (McGlashan & Johannessen, 1996; McGlashan et al., 2001). Symptoms detected in a prodromal symptomatic state of schizophrenia are associated with an individual's risk for schizophrenia, not with a schizophrenia diagnosis itself (McGlashan et al., 2001). Subgroups of high-risk psychosis-prodromal-state criteria involve a mix of functional decline and genetic risk factors (Yung et al., 1996; McGlashan et al., 2001). Yung et al. (1996) recruited five samples of patients meeting criteria for high-risk prodromal subgroups to a Melbourne clinic (each group came from a different period). A high-risk prodromal subgroup included those who reported symptoms indicative of a brief intermittent psychotic state, an attenuated positive symptom state, or a genetic risk and deterioration state. Conversion rates within one year across the five patient samples ranged between 21 and 54 percent (McGlashan et al., 2001). From these samples, most patients convert to psychosis within the first six months after baseline SIPS assessment, suggesting that patient symptoms are detected in the late prodromal stages (McGlashan et al., 2001). The conversion rates determined thus far do not apply to asymptomatic individuals in the general population or to those who have a genetic risk for developing psychosis; they apply only to those in the general population (regardless of family history) who have developed symptoms leading them to seek treatment

(McGlashan et al. 2001). Patients who meet at-risk criteria during assessment screening may or may not develop psychosis (McGlashan et al., 2001).

Psychotic-like experiences (PLEs) are symptoms in non-clinical populations that can range from low-intensity, non-distressing to high-intensity, distressing (Hinterbuchinger & Mossaheb, 2021; Kelleher & Cannon, 2011; Lee et al., 2016; Isaksson et al., 2022; Hafeez & Yung, 2020). PLEs include visual and auditory hallucinations as well as paranoid delusions, bizarre behavior, and beliefs that someone else is controlling one's own body or that the individual possesses special powers (Laurens et al., 2007; Lee et al., 2016). Isaksson et al. (2022) assessed PLEs in 1146 adolescents who responded to a large questionnaire mailed out to families with adolescents born in 1997 and 1999 in the Swedish county of Västmanland ( $M = 14.36$  years;  $SD = 1.04$ ) at baseline and 6 years later when they were young adults ( $M = 20.15$  years;  $SD = 1.08$ ). PLEs were assessed on a nine-question self-report questionnaire using 3-point scales ( $0 = \text{not true}$ ,  $1 = \text{sometimes}$ ,  $2 = \text{often}$ ), so total scores ranged from 0-18; a higher score indicates the presence of more PLEs (Isaksson et al., 2022). The most reported PLEs in adolescence and adulthood were the belief they were able to read others' thoughts (23.3%), the belief that they were being spied upon or stalked (21%), and the belief that others could read their thoughts (17.2%) (Isaksson et al., 2022). Of the nine questions, one was particularly relevant for the present study: *Have you ever seen something or someone that other people don't see?* (Isaksson et al., 2022). Isaksson et al. found that individuals with PLEs that persisted from adolescence to adulthood reported a higher frequency of the particular PLE of most interest to us: seeing something or someone that others could not see. About 28% of adolescents reported PLEs of seeing things that others cannot, but when you follow those adolescents into young



adulthood that number diminishes to 16.4% (Isaksson et al., 2022). These results indicate that visual distortion experiences, for some individuals, are persistent over time.

Capizzi et al. (2022) administered the Prodromal Questionnaire (PQ; Lowey et al., 2007) to a sample of 3584 undergraduates to investigate the relationships of items with ratings by clinician-administered interviews. The PQ is a 92-item self-report questionnaire intended to identify individuals who may be at risk for psychosis organized into four subscales: positive, negative, disorganized, and general symptoms (Loewy et al., 2007). The 45-item positive subscale asked participants to indicate if a symptom was experienced in the past month and if so, how frequently they experienced each symptom, Capizzi et al. (2022) examined *yes/no* endorsement of each symptom; if a participant answered *yes*, they were also asked to indicate if the experienced symptom was distressing. A subset of 162 participants (4.5%) were selected to participate in a separate pilot study based on their responses to the PQ (Capizzi et al., 2022). Participants were considered *likely* to receive a Structured Interview for Prodromal Symptoms (SIPS; Miller et al., 2003) clinical high risk (CHR) diagnosis—if they endorsed as distressing a minimum of 8 PQ positive subscale items (the screening cutoff suggested by the initial PQ validation study; Loewy et al., 2005; Loewy et al., 2007). Also, part of the 162 participants were those who were considered *unlikely* to receive a SIPS CHR diagnosis—they endorsed a maximum of 8 total PQ positive subscale items with at most 3 identified as being distressing to the subset.<sup>3</sup> These 162 were interviewed with the SIPS, a semi-structured interview intended to identify individuals who may be at risk for developing a psychotic disorder (Miller et al., 2003). Capizzi et al. (2022) considered items that were commonly endorsed by participants on the PQ and calculated the probability that individuals with positive item endorsements have the disorder;

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<sup>3</sup>Capizzi et al. (2022) did not indicate how many participants in their study were part of the *likely* CHR and the *unlikely* CHR groups. They report only that the these two groups in total comprised 162 participants.

that is, they computed each item's sensitivity, specificity, and Positive Predictive Value (PPV) to find if these items were associated with the corresponding symptom domains on the SIPS. Sensitivity and specificity describe the accuracy of the questionnaires to report the presence or absence of a symptom; measured from 0% to 100% PPV focuses on positive screening tests and calculates the probability that an individual who says *yes* on the screener has the symptom measured from 0% to 100%. Capizzi et al. (2022) evaluated commonly endorsed items on the PQ as to how well they predicted the SIPS; the most frequently endorsed item on the PQ (*I have difficulty organizing my thoughts or finding the right words*) had 100% sensitivity, 18.06% specificity, and a PPV of 5.22% when compared to the disorganized communication SIPS domain (Capizzi et al., 2022). That is, a *yes* response on the PQ indicates a positive test result in the disorganized communication SIPS domain 5.22% of the time. Other item domains that were considered to be predictive of the SIPS were: unusual thought content/delusional ideas, suspiciousness/persecutory ideas, and grandiose ideas (Capizzi et al., 2022). According to Capizzi et al. (2022), item 60 (*I have experienced unusual bodily sensations such as tingling, pulling, pressure, aches, burning, cold, numbness, shooting pains, vibrations, or electricity*) and item 9 (*I have smelled or tasted things that other people didn't notice*) were predictive of the perceptual abnormalities/hallucinations domain on the SIPS 19.61% of the time. However, whereas these items are measures of perceptual abnormalities, they do not necessarily measure visual hallucinations. In fact, none of the commonly endorsed items involved visual hallucinations. The PQ is intended to screen for clinical high-risk individuals in research clinics as the original normative sample assessed a clinical population with the assumption that individuals are seeking treatment for distressing symptoms (Lowey et al., 2005). Therefore, these

results suggest that questionnaires such as the PQ may not operate similarly in clinical and non-clinical populations (Capizzi et al., 2022).

There are two PQ items that are particularly relevant to the present study, item 20 (*Things have appeared different from the way they usually do (brighter or duller, larger or smaller, or changed in some other way)*) and item 84 (*I have seen things that other people don't see*) (Capizzi et al., 2022, p.313). Because item 20 and item 84 were endorsed by only ~10% and ~5% of the sample respectively, Capizzi et al. considered them not sufficiently frequently endorsed by participants and so did not determine whether these items were significantly associated with the corresponding SIPS domain.

### **Summary and Critique**

There is considerable interest in prodromal characteristics of psychosis. There is considerable variability in the stability of the kinds of symptoms that are measured, ranging from self-reported visual hallucinations, which are not stable across development, to visually distorted experiences, which are persistent over time. It is unclear whether this variability comes from differences in samples, participant item interpretation, or method of assessment.

Prodromal characteristics are usually assessed by self-report questionnaire. Many such self-report methods do not carefully define their terms. For example, the most frequently endorsed item presented by Capizzi et al. (2022) is “I have difficulty organizing my thoughts and finding the right words.” However, there is no reason to be confident that various respondents understand “difficulty” in the same way as each other or as the investigators, or “organizing” in the same way, or “thoughts” in the same way. The item of most interest to us in Capizzi et al. (2022) is “Things have appeared different from the way they usually do (brighter or duller, larger or smaller, or changed in some other way.” As with the previous item, there is no reason to be

confident that respondents understand “things” in the same way or “different” in the same way. Other examples include self-report questionnaires that use a 3-point scale (0 = *not true*, 1 = *sometimes*, 2 = *often*) but we have no way of knowing if the response *often* means once an hour, once a day, or once a week, or once a year, but when it happens it is noteworthy. Furthermore, it is unclear if a person who endorses the symptom “seeing something that other people don’t see” is referring to visual hallucination, visual imagery, or insightful observation. In short, because current methods of examination do not carefully describe endorsed experiences, a method that carefully examines moments of experience could potentially provide insight into the presence and extent of visually distorted experience.

The currently used symptom questionnaires have been validated, so there is clearly some regularity in the ratings that respondents provide. However, regularity in ratings of experiences does not imply accuracy or fidelity of descriptions of experience. We turn now to a method that seeks fidelity of experience.

### Chapter 3: DES and Schizophrenia

Descriptive experience sampling (DES; Hurlburt, 1990, 2011a) is a method for apprehending and describing pristine inner experience. By *inner experience*, DES means directly apprehended experience, either internally or externally present “before the footlights of consciousness” at particular moments (Heavey et al., 2010). DES uses *pristine* in the same way as a forest is called pristine: as it naturally occurs, “in the wild,” before it is disturbed or corrupted by the asphalt and plastic of civilization. Thus, pristine inner experience is inner experience before it is disturbed, corrupted, interrupted, or distorted by attempts to observe or apprehend it (Hurlburt, 2011a; Lapping-Carr & Heavey, 2017). Just as a pristine forest is sometimes mucky or bloody, pristine inner experience is not necessarily clean or pure but rather is experience whose apprehensions and descriptions are untouched by self-beliefs, by expectations about what experience should be, or by theories of how to measure it (Hurlburt, 2011a; Lapping-Carr, 2017).

Gathering high-fidelity descriptions of inner experience is difficult because people generally have little practice apprehending and describing their own inner experience (Hurlburt, 2011a). Participants and investigators must take the time to clarify and refine their language with each other to faithfully understand what is in an individual’s inner experience (Lapping-Carr, 2017). Furthermore, both investigators and participants have assumptions (DES calls them presuppositions) about what inner experience generally is or what should be experienced in specific situations (Hurlburt, 2011a). DES asks participants to apprehend and describe inner experience at a specific moment because experience is not general or abstract—experience takes place at a specific moment. We pick a random moment, so people are not talking about their

favorite moment or a most interesting moment, or avoiding undesired moments, but rather to obtain a representative sample of moments (Hurlburt, 2011a; Lapping-Carr, 2017).

The iterative procedure is essential to the DES process. By iterative, we mean that each apprehension and description of experience enhanced or informed by previous attempts to apprehend and describe experience (Hurlburt, 2011a). Multiple sampling days are needed to refine individual specifics of language, to reduce the operation of presuppositions, to refine the participant's ability to cleave to the moment and to pristine inner experience, and thus in general to provide high fidelity descriptions (Heavey et al., 2010; Hurlburt, 2011a; Heavey, 2012; Hurlburt & Heavey, 2015; Lapping-Carr, 2017).

Hurlburt (1990) conducted the only DES study of patients diagnosed with schizophrenia. He described four individuals, the first of whom was a 23-year-old woman he called "Jennifer," who had been diagnosed with schizophrenia four years prior to participating in DES as a result of hearing voices that triggered sadness (Hurlburt, 1990). Despite Jennifer's general report that the voices were always dimly present, during the 3-week sampling period a beep never occurred during a voice-hearing moment. Jennifer's inner experience involved inner seeings of external reality, inner seeings related to current activities, daydreams, visualizations of written words, distortions in inner seeings, color, and movement. Jennifer's external and inner seeings were sometimes "goofed up": distorted in ways that were not meaningful. For example, seeing sometimes involved tilting of all or part of an image—an arm might be separated from the body and twisted in an unnatural way. Jennifer's experience involved a special interest in the colors in her inner seeings. For example, Jennifer innerly saw herself talking on a telephone with a particular interest in the tan color of the innerly seen telephone. Jennifer also had a particular interest in colors in her external environment. For example, Jennifer was particularly interest in

the red of her nail polish, the orange, red, and white balls on a pool table, and the green of the vegetables on her plate. Sometimes Jennifer's experience of color in her visualizations would be different than the colors present in the external world. For example, Jennifer was talking to Joe (one of the residents), but instead of seeing him directly, she innerly saw him. Furthermore, she saw him holding a blue glass, but in the real world the glass was yellow.

The second patient, Joe, was a 42-year-old man diagnosed with schizophrenia, having delusions and hallucinations (Hurlburt, 1990). Unlike Jennifer, Joe had extensive difficulty describing his inner experience and adhering to the task of apprehending his experience at the moment of the beep. Considering Joe's extensive difficulty in apprehending his experience, Hurlburt concluded that Joe likely did not have experiential aspects (e.g., seen object, heard sounds) present in his experience. Joe's sensorium was apparently normal—he interacted with his environment skillfully—but that these sensations were apparently not experientially directly present to him during sampled moments. For example, Joe might skillfully approach and sit down on a chair, but he apparently had no directly apprehended experience of a chair (or anything else) during that action.

The third patient was Bob, a 19-year-old male who had been admitted to the inpatient facility as a result of overwhelming delusions of persecution and grandiosity (Hurlburt, 1990). During the second part of sampling, apparently as a result of a decision to reduce his medication, Bob's overall functioning began to deteriorate. This Hurlburt called the first part of sampling the Symptom-Free period and the second part the Decompensating Period. During the Symptom-Free period, Bob's inner experience consisted of feelings, inner seeing of colorful vivid images, inner seeing of inky blackness, inner hearings flew through and around Bob's head, and inner speaking. In one example of the inky blackness, Bob was playing the game "Risk" with other

patients. As his turn began, Bob was “thinking about” the empire he was building on the game board. This “thinking about” involved seeing the game board and pieces, but his focus was behind the board a great expanse of Blackness. Bob understood this Blackness to represent the scope of his empire he was building in the game. The game board was seen incompletely; only the segment of the board with Bob’s own pieces were seen, the rest of the board replaced by Blackness. For Bob, the Blackness was a perceptual reality, not just an absence of seeing. The Blackness also represented a happy feeling of being about to win the game. During the Decompensating Period, Bob gradually became unable to describe experiential details that were ongoing at the moment of the beep and seemed to struggle overall with the sampling task that had not been difficult for him during the Symptom-Free Period. A Decompensating-Period example involved Bob watching television. At the moment of the beep, he innerly heard “She was right” (the sampling was in Holland; the words were the Dutch "Zij heeft gelijk") conveying that he agreed with what he heard on the television. These words, as a unit, traveled a looping path that exited his head around the base of his left temple, circled around the base of his head, reentered his head near the right temple, then passed out through his right forehead into the distance in the front right direction. Bob described the trajectory of these words occurring “like a flash of lightning.” Bob was not confident about the characteristics of the voice he heard or if it was the sound of words at all. Overall, Bob was uncertain about whether or not this experience involved hearing, first saying he heard the words, then being unsure he heard them, then becoming more confident that he heard them. Another example during the Decompensating Period involved three parts that appeared to occur in rapidly; so much so that Bob could not distinguish whether they occurred in succession or overlapped. These three parts involved the Mt. Everest part, the Jupiter part, and the Very Beautiful part. The Mt. Everest part involved



inner seeing Mt. Everest from the Tibetan side with snow, a small building, and some rocks falling down the side. This inner seeing was clear with accurate color and orientation. The Jupiter part involved a simultaneous three-part experience. First, Bob innerly saw the planet Jupiter, but vague and without much detail with Bob describing little knowledge of the planet and thus was unable to innerly see it accurately. Bob described this portion of the Jupiter part experience as extended in time longer than the next two parts. Second, Bob heard the word “Jupiter.” Third, he briefly innerly saw the word “Jupiter” with the individual letters seen three-dimensionally, from slightly above so that the lines for each letter seemed to recede into the distance. The lines were only straight for what seemed a few inches then bent downward to the left and disappeared. The word and lines were seen as if moving toward Bob with the lines trailing behind and marking its trajectory. Bob experienced himself actively involved with this trajectory such that he had to hold the word away at a safe distance. As the word was seen flying by, he innerly saw the planet itself directly in front of him. The Very Beautiful part of his experience involved a two-part sentence. The first part of the sentence, “It would be a long time for people before they travel this way...” was not spoken or heard and occurred one at a time. The second part of the sentence “...but it would be very beautiful,” represented Bob’s feelings, which were visual. Bob described this portion of his experience as something that could not be seen but was experienced visually. Occasionally, Bob was unwilling to sample saying the experiences were too intense or recording only one sample on a given day (Hurlburt, 1990).

The fourth patient was Sally, a 31-year-old woman who had received a diagnosis of schizophrenia due to reports of frequently hearing voices (Hurlburt, 1990). Sally sampled for 3 days, but then discontinued because she was concerned that voices would punish her if she continued. Of the 14 obtained samples, six involved direct perceptual awareness of the voices of

the gods, about 20 voices simultaneously heard inside or around her head. Occasionally, Sally had visual experiences, some being of the gods appearing as shadowy beings, and others being inner seeings that were understood as being imaginary. Sally also had verbal experiences that did not involve the gods; one experience was of inner speaking in her own voice and another involved inner hearing of a friend's voice. Finally, Sally's experience had hyper-clear emotional content. For example, Sally was in conversation with her mother. At the moment of the beep, Sally was speaking aloud to her mother while the gods were speaking nearby. Sally experienced the gods to be speaking to each other in a conversation that Sally could overhear but not understand exactly--the general sense of the conversation involved criticism of people and the world. This conversation by the gods evoked strong anger that involved both bodily aspects and inner seeing. The bodily aspects were characterized by tension in her hands and stomach. The inner seeing involved a moving image of ten people riddled with machine-gun bullets, covered with blood while falling and screaming. Another example involved Sally thinking about the irritatingly slow way in which her boyfriend, Maarten does things. Sally innerly saw Maarten extending his arm to put on his coat, seen in very slow, exaggeratedly slowed motion, much slower than Maarten's already slow manner of movement. Concurrent with this inner seeing was a bodily feeling of irritation (Hurlburt, 1990).

In sum, Hurlburt (1990) found aspects of inner experience among the patients with schizophrenia that were different from people without schizophrenia. First, the seeings or inner seeings of schizophrenia patients were sometimes "goofed up," somehow factually incorrect with details of the innerly seen object different from reality (Hurlburt, 1990). Second, the timing of inner experience was sometimes different for the patients with schizophrenia. Individuals without schizophrenia typically apprehend the beep and its recognition of the beep as an

immediate process, whereas schizophrenia patients occasionally describe the process of recognizing the beep as extended over time or impossible to locate in time (Hurlburt, 1990). Third, schizophrenia patients' words were occasionally present in experience with visual/spatial qualities (Hurlburt, 1990). Words were innerly seen at an angle, or piled on top of each other, or seen in jumbled order without semantic organization. Fourth, words of patients with schizophrenia frequently moved: words and sentences were seen or heard to fly around a subject's head or move out into the distance. Fifth, decompensating patients with schizophrenia may have had no inner experience.

This is the only DES study involving patients with schizophrenia; future research should involve sampling with this population. Overall, the samples from the schizophrenia inpatients involved internal distorted inner seeing rather than perceived real-world distortions of reality.

### **Creative Seeing**

Hurlburt (personal communication) has noticed in his DES research that occasionally a participant sees a characteristic of their environment that does not conform to the real world as others (or they themselves on other occasions) would see it. The discrepancy is generally revealed by the DES participant's retrospective consideration of their own experience. Here is an example:

[Liv was walking to unplug her iPad from its charger.] She sees the iPad leaning straight up and down against the wall; she sees this as a pink rectangle with four circular black rubber dots (the iPad feet). This was experienced as a natural seeing—as seeing the actual iPad as it actually was—even though it was discrepant from the actual iPad in four ways: first, Liv saw the iPad leaning against a continuous wall, whereas the actual iPad was leaning half against the wall and half hanging out into the doorway past the end of the

wall. Second, she saw the iPad straight up and down, whereas the actual iPad was leaning at an angle. Third, she saw the four feet (small, circular rubber grips) of the iPad, whereas in reality, the iPad has only two feet (the other two had fallen off long ago). And fourth, she saw the iPad as a rectangle, whereas the actual iPad has curved edges and rounded corners.

Liv's seeing was experienced as a real perception—that is, Liv understood herself as simply being engaged in a real seeing of the existing iPad. There was no experienced contemporaneous meta-observation or secondary perspective at the moment of the beep. Furthermore, this perception was *not* experienced as *innerly seeing* (a.k.a. seeing an image of) the iPad.

Furthermore, there was no experience of distortion—as far as her experience was concerned, she was seeing the iPad as it actually was. Only on retrospection was the seeing noticed to have been a distortion of reality. Furthermore, the distortions were *not* due to extraneous factors such as bad lighting, obscured perspective, psychedelic drug effects, or the like. Instead, Liv (distortedly) saw plainly visible aspects, as she herself recognized on retrospection just after the beep while she still had short-term memory of the beeped experience and the physical reality remained directly accessible.

Hurlburt and DES call this *creative seeing*. A seeing is called *creative* if, on retrospection, the individual ascertains that what they had seen at the moment of the beep was discrepant in some substantial way from what they now recognize to be a characteristic of the external world. Creative seeing thus has three features: (a) distortion of reality, (b) a perception apprehended as being of the world as the world is, and (c) a seen characteristic that others would not see in identical situations. Hurlburt prefers to call this phenomenon *creative* (a) to indicate that Liv is seeing some aspects that she herself has created, and (b) to try to avoid any pejorative

connotation of terms such as *distortion*. So far, there are no published DES descriptions of creative seeing.

Creative seeings are visual-perceptual distortions of reality. Hallucinations are also visual-perceptual distortions of reality. So far, there is no exploration of whether creative seeing should be considered a hallucination, a prodromal hallucination, or something altogether different from a hallucination. This is at least in part due to the fact that careful descriptions of pristine experience are rare, and descriptions of the phenomenon of creative seeing are rarer still. That is, it requires a method at least as careful as DES to discover creative seeing: in Liv's everyday life, with no DES beeper present, she would likely have picked up the iPad and gone about her business without ever noticing that her perception had been distorted.

#### **Chapter 4: Current Study – Overview and Purpose**

We recruited “Rhea” to be a DES participant to provide practice in performing DES interviews for a graduate student learning the DES method (the present study’s author). That is, Rhea was *not* recruited because of any particular experiential or personal characteristic other than a willingness to participate as a DES training participant. During the course of these practice DES samplings/interviews, which were conducted jointly with the originator of DES, we discovered that Rhea had frequent creative seeings. That provided an unexpected opportunity to describe in detail one person’s creative-seeing experience. As we considered presenting these results to a wider audience, we administered to Rhea the SIPS (Miller et al., 1999), a measure of prodromal symptoms of psychosis. The SIPS includes the item “Do you ever see things that others can’t or don’t seem to see?” (McGlashan et al., 2001, p. 18) which might allow us to compare the severity of prodromal symptoms and whether those discovered by DES to her prodromal characteristics as measured by the SIPS. Thus, this is an  $N = 1$  study, with all the limitations of case studies, but it should allow us (a) to get a clearer-than-previously-available glimpse into the phenomenon of creative seeing, and (b) provide the occasion to discuss the relationship (or lack thereof) between creative seeing and characteristics that are generally considered prodromal (such as seeing things that aren’t there).

## **Chapter 5: Method**

### **Participant**

Rhea was a 26-year-old female undergraduate University student who was recruited to participate as part of AG's DES training. RTH, a university instructor, had described DES during a class Rhea was taking, saying he was looking for volunteer DES participants for AG's interview practice. Rhea, who said she had an interest in inner experience (she regularly meditates) and an overall interest in psychological topics and research, volunteered for the task. Rhea did not appear to have any psychopathological symptoms at the time of DES sampling. Before participating in DES, Rhea believed that she regularly engaged in inner speaking and wanted to explore what was present in her internal dialogue.

### **Instruments**

#### ***Structured Interview for Psychosis-Risk Syndromes (SIPS)***

The SIPS is a semi-structured interview designed to identify psychosis prodromal states, symptoms, and the severity of any present symptoms (Miller et al., 1999). The SIPS includes the Scale of Prodromal Symptoms (SOPS), a scale designed to measure the severity of prodromal symptoms and whether those symptoms have changed over time (Miller et al., 2003). The SOPS has four sections: positive symptoms, negative symptoms, disorganization symptoms, and general symptoms. The SOPS contains 19 individual SOPS scales that are rated on 7-point severity scales from 0 (*Never, Absent*) to 6 (*Severe/Extreme*) that measure the severity of symptoms within four sections: positive symptoms, negative symptoms, disorganization symptoms, and general symptoms. The positive symptoms are accumulated in the Positive Symptoms Severity Scale, which includes five subsections: Unusual Thought Content/Delusional Ideas (subsection P.1), Suspiciousness/Persecutory Ideas (P.2), Grandiosity (P.3), Perceptual

Abnormalities/Hallucinations (P.4) and Disorganized Communication (P.5). The negative symptoms are accumulated in the Negative Symptoms Severity Scale, which includes subsection N.1, N.2, N.3, N.4, N.5, and N.6. The disorganization symptoms are accumulated in the Disorganization Symptoms Scale, which includes subsections D.1 through D.4. The general symptoms are accumulated in the General Symptoms Scale, which includes subsections G.1 through G.4. Each of these four scales is used to determine the severity of a prodromal state if one is present in that section.

Of particular interest to use in the present study is the Perceptual Abnormalities/Hallucinations subsection (P.4), where participants are rated based on their understanding of whether their perceptual abnormality is real and external or a figment of their imagination, the ability to be skeptical about the perceived abnormality, experienced distress from the perceptual abnormality, and the interference in social and behavioral functioning resulting from the abnormalities.

The sum of the 19 SOPS subsection scores (P.1, P.2, ..., P.5, N.1, ..., N.6, D.1..., D.4, G.1..., G.4) results in a total SOPS score ranging from 0-114, which is used to judge the severity of the prodromal state overall (Miller et al., 1999).

Individual SOPS subsection scores (P.1, P.2...,G.4) of 3 or higher require additional evaluation to determine the onset, worsening, and frequency of symptoms and if these symptoms are better explained by another DSM diagnosis. The Criteria for Prodromal States (COPS) operationally defines three psychosis prodromal syndromes: Brief Intermittent Psychotic Syndrome (BIPS), Attenuated Positive Symptom Syndrome (APSS), and Genetic Risk and Deterioration Syndrome (GRD) (Miller et al., 2003). SOPS scales receiving ratings of at least 3 are evaluated according to frequency to determine a lifetime presence of any of the three COPS



psychosis-risk syndromes. The Presence of Psychotic Symptom Criteria (POPS) provides an operational definition for psychosis onset and when applied to the positive symptom information from the SOPS can help diagnose a prodromal syndrome in symptomatic individuals (Miller et al., 2003).

Additional ratings are evaluated based on the subject's responses to the interview. These include the Global Assessment of Functioning (GAF), rated from 1-100 to assess overall psychological, social, and occupational functioning, with a higher score indicating greater levels of functioning; a DSM-5 Schizotypal Personality Disorder Criterion checklist requiring the endorsement of at least five symptoms during a one-month period; and a family history of mental illness to determine the potential risk for developing symptoms. Scores in the 3 to 5 range on the SOPS scales are considered psychosis or the presence of symptoms at the prodromal level. A rating of 6 indicates pathological levels of psychosis (Miller et al., 1999).

### ***Beeper***

The standard DES beeper 4.15 x .85 x 2.40 inches emits a 700 Hz tone through an earphone. The beep sounds randomly (uniform distribution from a few seconds to a maximum of 60 minutes) and continues until the participant presses a button.

### **Procedure**

Rhea's sampling aimed to serve as a DES participant allowing graduate students to practice the DES skills of apprehending what (if anything) was in Rhea's experience at randomly selected moments. This, as well as the DES procedure, was transparently described to Rhea with any of her questions answered candidly.

### ***Descriptive Experience Sampling (DES)***

Rhea engaged in the typical DES procedure (Hurlburt & Heavey, 2006; Hurlburt, 2011a). On each sampling day, Rhea wore the beeper in her natural, everyday environment and was asked to collect six samples, taking roughly two to four hours to complete.

Within 24 hours of sampling, Rhea met with at least two DES researchers (always AG and RTH, sometimes other DES lab members) for an expositional interview. Expositional interview questions always involve some form of the question ‘What, if anything, was in your experience at the moment of the beep?’ and subsequent follow-up questions aimed at (a) iteratively training the participant and interviewers to be more skillful on subsequent sampling days; and (b) aspiring to produce an unambiguous understanding and description of experience, which requires the bracketing of presuppositions by both Rhea and the DES researchers. Within 24 hours (usually within 6 hours) of each expositional interview, the DES researchers collaborated to write a “contemporaneous” description of each of Rhea’s experiences that had been ongoing at the beeps. Each contemporaneous description aimed to commit each investigator, while the recollection of the interview was still fresh, to articulate faithfully their understanding of that experience and to help each other remove ambiguities in their understandings. The aim of the contemporaneous descriptions was *not* necessarily to come to a consensus about what had been present at Rhea’s moments of experience.

After sampling concluded, Rhea and DES researchers met to review all sampled experiences across all sampling days. This review used the contemporaneous descriptions, the investigator’s recollections, and (if necessary) the interview video to reawaken each investigator’s grasp of what had been directly present in experience at each beep. Each investigator had the responsibility to listen to the other investigator’s characterization with the aim of verifying, updating, and/or clarifying, the apprehension of the experience. During this

meeting, the investigators wrote a brief caption of each sample, a few words designed to point the investigators back to the experience at the sample. Within 24 hours of that meeting, each researcher independently wrote an informal characterization of the salient characteristics, and phenomena that they viewed as frequently experienced or otherwise noteworthy across the collection of Rhea's samples. AG accumulated the independent characterizations and created a description of each of the characteristics that had occurred.

In a process DES called rectification, each investigator rated each sample as to the presence, absence, or possible presence of each of the accumulated characteristics. Those ratings formed the basis of the rectification meeting, whose aim was to clarify as a group each of the potential salient characteristics. Until now, the apprehensions and descriptions have largely been the individual responsibility of each individual investigator; now, for the first time, it is the responsibility of the group to clarify its consensual apprehension. Now, as a group, the DES researchers considered each sample and all their individual ratings. The rectification process considers each experience, focusing primarily on aspects where investigators disagreed about the presence of a phenomenon. The aim of this focus was *not* primarily to arrive at a consensual rating, but to use that disagreement as a springboard for discussion about the “edges” of the phenomenon—how should we alter or clarify our joint apprehension of a characteristic or phenomenon so that the group and each individual investigator has a deeper understanding of the phenomenon. After the rectification process, a final characterization of salient characteristics was generated to describe the participant's pristine experiences across all sampling days.

All interviews were video-recorded as a part of DES procedure and used in supervision, and potentially for training other DES researchers. After each interview, a trainee wrote a summary of each of Rhea's sampled experiences and circulated that description to any other

trainee present as well as the supervisor; they provided tracked-changed edits, comments, or exercises designed to advance interviewer skills or understanding of Rhea's experience.

## Chapter 6: Results

Rhea collected 70 sampled experiences across 12 days, typically 6 per day. As typical of all DES studies, we excluded the 5 samples from the first sampling day (regarding them as training), and we did not discuss 3 samples because of lack of time. As outlined in Table 1, in total, we discussed 62 samples across 11 sampling days. Of particular interest here is sensory awareness, (56 samples) and creative seeing (22 samples).

**Table 1**

*Summary of Rhea's Samples*

All samples = 62						
Sensory awareness = 56						Not = 6
Creative seeing = 22					Not = 34	
Insertion = 11			Deletion = 7	Misinterpretation = 4		
Doing of = 3	Not = 8					
	Sensory awareness of inserted detail = 5	Not = 3				

## DES Five Frequently Occurring Phenomena (5FP)

Across many studies, DES has found five frequently occurring phenomena (5FP; Kühn et al., 2014) of inner experience: inner speaking, inner seeing, unsymbolized thinking, sensory awareness, and feelings (Heavey & Hurlburt 2008; Heavey et al., 2019). These phenomena are described in Table 2 in decreasing order of their frequency of appearance for Rhea.

**Table 2:**

*Frequencies of Five Frequent Phenomena (5FP)*

Phenomenon	Definition	Frequency
Sensory Awareness	Attention toward a particular sensory aspect of the environment where a sensory aspect is a focus of the experience apart from the object of perception (Heavey & Hurlburt, 2008)	56 (90.3%)
Inner speaking	Speaking words with the same characteristics of external speech without actual external sound or motion (Heavey & Hurlburt, 2008)	13 (21%)
Inner seeing	Seeing something in one's imagination that is not actually present in the immediate environment (Heavey & Hurlburt, 2008)	3 (4.8%)
Feelings	Affective experiences (e.g., sadness, happiness, anger, anxiety, etc.)	2 (3.2%)
Unsymbolized thinking	Thinking a specific thought without that thought being conveyed in words or images (Heavey & Hurlburt, 2008)	0 (0%)

*Note:* Percentages do not add to 100% because multiple phenomena may occur in each sample.

Sensory awareness is the direct experience of a sensory aspect of the body, outer environment, or inner environment (Heavey & Hurlburt, 2008; Hurlburt et al., 2009) without regard for the instrumental significance of the aspect. Sensory awareness was the most salient of the 5FP in Rhea's experience, occurring in 56 of her 62 samples (90.3%) as shown in Table 1. Of

the 56 sensory awareness experiences, most (40 of 56; 71.4%) involved only a visual component, of which most (29 of 40, 72.5%) involved color. For example:

Sample 7.1: Rhea was driving. At the moment of the beep, Rhea saw white-ness (of another car in front of her).

In this example, Rhea is directly experiencing the white-ness, the color, without regard for the fact that it is part of a car. Therefore, Rhea is interested in the color for itself, not for its function. Her experience is *not* of the car itself (the car-ness of the car), but only of the white-ness.

Sometimes she had color sensory awareness at the same time as other sensory modalities. For example:

Sample 10.3: Rhea was looking inside a bag of key-lime pretzels, which were green. At the moment of the beep Rhea (50%) saw green-ness (of the pretzels). At the same time, Rhea (50%) heard loudness on her left (from a baby's laugh). [The pretzels and baby were not themselves part of Rhea's experience but were rather the sources of the greenness and the loudness.]

There were two simultaneous and separate sensory awarenesses here, one visual and one auditory. Visually, Rhea is interested in the green-ness (of the pretzels); the pretzel-ness doesn't really matter to her.

Whereas many (40 of 56; 89.3%) of Rhea's sensory awarenesses involved only visual perception, Rhea had 10 instances where her sensory awareness contained a non-visual (e.g., auditory, tactile, temperature) aspect, some of these (6 of 10; 60%) also involved visual aspects. The loudness in sample 10.3 is one such example: the hearing of the baby's loud laugh is a non-visual sensory awareness in a sample that also includes a visual (green-ness) sensory awareness. Here is another:

Sample 4.6: [Rhea was cleaning her counter with a towel.] At the moment of the beep, Rhea was feeling squishy wetness (of the towel) (70%). At the same time, she was seeing the green (of the towel) (30%).

In sample 4.6, Rhea had two separate sensory awarenesses. Both involved the same towel, but the towel itself was not of particular interest. She was particularly interested in the squishy wetness (which happened to be of her towel); simultaneously she was interested in the greenness (which happened to be of her towel). The two sensory awarenesses are experientially independent of each other.

In sum, Rhea's sensory awareness has two important aspects: First, almost all (90.3%) of Rhea's DES samples contained some aspect of sensory awareness, well more than the 25% Hurlburt & Heavey (2008) average found among their DES participants. Second, nearly all of Rhea's sensory awareness included a visual aspect.

Rhea's second-most frequent 5FP experiences were of inner speaking, which is experienced by an individual as speaking with no external sound produced (Hurlburt et al., 2013). These experiences occurred in 13 (21%) of Rhea's 62 samples.

Sample 12.6: [Rhea was reading a book.] At the moment of the beep, Rhea innerly said "something." [Rhea was reading a sentence, but only "something" was in Rhea's experience at the moment of the beep; that is, Rhea experienced one word at a time rather than the entire sentence.]

Many (7 of 13; 53.8%) of Rhea's inner speakings were characterizations of an ongoing aspect of sensory awareness. An example involving a sensory awareness of color:

Sample 12.1: Rhea was looking in the mirror and was focused on her shirt. At the moment of the beep Rhea innerly spoke "blue outline" in her own inner voice; "blue



outline” was not part of a longer sentence). Simultaneously, she was looking at the blue outline on her shirt. The inner speaking was much more prominent in her experience than the seeing.

This experience, like sample 10.3, (the greenness of pretzels), involved a sensory awareness (here of blue outline). The difference is that in the present sample, there is an innerly spoken caption-like phase “blue outline,” whereas in 10.3, there were no words involved.

Another example of an inner speaking characterizing sensory awareness was sample 12.2, where the sensory awareness was of coldness:

Sample 12.2: Rhea was eating blackberries. At the moment of the beep Rhea (50%) felt coldness on her back-right tooth in the middle moving downwards (toward the root of her tooth). At the same time, Rhea (50%) innerly said “cold” (in her own inner voice; Rhea’s experience at the moment of the beep was of innerly saying the word “cold”; that word was part of an innerly said sentence (something like, “this is cold”), but the experience at the moment of the beep was of innerly speaking only the one word “cold.” (That is, the other words in the sentence, and the notion that there was a sentence, were not present at the moment of the beep.) Rhea (50%) felt coldness on her back-right tooth in the middle moving downwards (toward the root of her tooth).

The majority (8 of 13; 61.5%) of Rhea’s inner speaking examples involved speaking a *chunk* of words rather than an ongoing entire sentence or flow of words. That is, there *was* an ongoing sentence, but the existence of that wholeness was not present at the moment of the beep—only a chunk (one or few words) was experienced as being innerly spoken. For example, in sample 12.2 Rhea experienced herself as innerly speaking “cold,” which was in fact part of a longer sentence, but Rhea did not experience herself as speaking such a sentence. Most DES

participants, when experiencing themselves as innerly speaking, might say that they were speaking a sentence (e.g., “this is cold”) and the beep came at a specific word (e.g., “cold”); that is, most participants would immediately apprehend “cold” as part of an ongoing sentence. By contrast, Rhea experienced herself at the moment of the beep as saying “cold,” *not* as part of the speaking of a sentence, even though retrospection shows that it indeed was part of a sentence.

Sample 12.6 (the while reading sample mentioned above) is another instance. Rhea experienced herself as innerly saying “something,” which in fact was part of a longer sentence that she was reading, but she did not experience reading an ongoing sentence. Rhea only experienced herself as saying the word “something,” *not* as part of a longer sentence.

In sum, Rhea’s inner speaking has three important aspects: First, most (53.8%) of Rhea’s inner speaking was a characterization of her sensory awareness. Second, most (61.5%) of Rhea’s innerly spoke *chunks* of words rather than ongoing sentences.

Rhea’s third-most frequent 5FP experiences were of inner seeing, the experience of seeing something in imagination that is not physically present (Heavey & Hurlburt, 2008). Inner seeing occurred in 3 (4.8%) of Rhea’s 62 samples.

For example:

Sample 9.6: Rhea was meditating, eyes closed. At the moment of the beep, Rhea innerly saw (80%) the cloudy letters C-H-A-N-G-E coming in from left to right. (That is, the cloudy letters were present as if a skywriter had written them, with a puffy quality.) Rhea did *not* see C-H-A-N-G-E as being the word “change,” (even though she saw letters, not the same word, even though she could retrospectively speculate the source of the word).

At the same time, Rhea (20%) saw the blackness of the background.

Rhea was somehow paying some particular attention to the blackness that surrounded C-H-A-N-G-E. That is, the blackness Rhea was not merely the background—she was somehow actively seeing it. However, Rhea was *not* particularly interested in the color of blackness—this was *not* sensory awareness.

All three of Rhea’s inner seeings occurred while her eyes were closed. Here is another example:

Sample 10.3: [Rhea was sitting on an airplane with her eyes closed.] At the moment of the beep, Rhea innerly saw a rectangle (which she understood to be an iPhone). At the same time, Rhea saw a square within the rectangle and was particularly drawn to the square-ness. [The central part of Rhea’s experience was the rectangle she understood to be an iPhone.]

In sum, Rhea’s experience of inner seeing was infrequent (occurring only 3 times in her 62 total samples) and occurred only when her eyes were closed.

The fourth most frequent (2 of 62, 3.2%) of the 5FP in Rhea’s experience was feeling, which is the experience of emotion. In DES participants generally describe feelings as occurring with bodily aspects or “mentally” (occurring without apprehended bodily aspects). Both instances of Rhea’s feelings were experienced bodily.

For example:

Sample 12.4: Rhea was smiling at a video of her nephew. At the moment of the beep, Rhea (70%) felt a fullness in her heart (a heaviness going in all directions, a pleasant/positive feeling). At the same time, Rhea (30%) sensed her cheeks rising (as a result of her smiling).

Rhea experienced the fullness in her heart as an emotion rather than as merely a bodily sensation. It was indeed a bodily sensation, but that was experienced in the service of the emotional feeling. By contrast, Rhea's experience of her cheeks rising was directly apprehended as a bodily sensation, *not* immediately part of an emotion. That is, even the cheeks rising were probably part of an ongoing emotional process, she did not experience that feeling. Thus, the heart sensation is grasped immediately to be feeling, whereas the cheeks sensation is grasped immediately to be a sensation.

The fifth of the 5FP is unsymbolized thinking in which an individual thinks a specific, and definite thought without this thought being conveyed with any words, images, or other symbols (Hurlburt & Heavey, 2008). Rhea had no samples of unsymbolized thinking.

### **Creative Seeing**

Recall that creative seeing has these features: (a) a distortion of reality, (b) a perception apprehended as being of the world as the world is, and (c) a seen characteristic that others would not see in identical situations. As shown in Table 1, 22 of Rhea's 62 samples (35.4%) involved creative seeing. There are three kinds of distortion: insertion of details, deletion of details, and misinterpretation of details. Furthermore, there were two relevant attributes of creative seeing: there was a range of Rhea's at-the-moment-of-the-beep recognition that creative seeing was ongoing (ranging from not all to inchoate), and there were some occasions where Rhea was purposefully meddling with her perceptions, the results of which were creative seeing.

### ***Kinds of Distortion***

As shown in Table 1, 11 (50%) of Rhea's 22 creative seeing samples involved the *insertion* of details, words, etc. that are not actually present. For example:

Sample 5.1: Rhea was reading a line in a poem that included the word “limb.” At the moment of the beep, Rhea (80%) saw spaces between the letters l-i-m-b. That is, at the moment of the beep Rhea *saw* a line that displayed spread-out letters, even though (as Rhea noticed only on retrospection) the letters had normal spacing. At the same time, she (20%) saw the white page’s background. This was not merely experientially background but was made somehow centrally thematic (even though only 20%-ish of her experience).

Rhea’s experience in this sample was not at all semantic—she did not experience *limb* as a word, did not experience the meaning of limb or the sentence that included it, and did not experience the letters as letters. Her experience was of wide spaces and the demarcation of those spaces (which in reality, happened to be the letters *l-i-m-b*). In reality, there was no distinct spacing between *l-i-m-b*. Therefore, as Rhea read, what she perceived was something like *l i m b*. Rhea noticed only on retrospection after the beep “limb” was printed in plain text without exaggerated spaces between the letters. Rhea did not experience herself as imagining or having created the exaggerated spaces between *l-i-m-b*. As far as her experience is concerned, she is seeing *l i m b* as set in the poem with large spaces. This sample is different from sensory awareness in that Rhea had distorted reality and made the spaces bigger but did not have a particular interest in the sensory aspects of the spaces, as would be the case in sensory awareness. The seeing of the background is similar to the black background of sample 9.6.

As shown in Table 1, five (45.5%) of Rhea’s 11 insertion-type creative seeings involved sensory awareness of the creatively inserted detail. For example:

Sample 10.1: [Rhea was reading a book.] At the moment of the beep, Rhea (50%) was reading with comprehension. At the same time, she (50%) saw, an inch or two below the currently-being-read text, some text highlighted in blue; she was drawn particularly to the

blue-ness. On retrospection, Rhea recognized that there was no highlighting anywhere on the page. At the moment of the beep, Rhea also had some inchoate recognition that something about the blue-highlightedness was amiss.

There were four aspects of this experience that are noteworthy. First, Rhea saw the highlighting *below* the text she was reading, that is, an inch or so below where her eyes were aimed; second, this highlighted text had no significance for the comprehension that was currently ongoing—she had not yet begun reading this passage; third, the highlighting that Rhea experienced was created by Rhea—only on retrospection did she notice that there was no real highlighting whatsoever; and fourth, Rhea was drawn to the blueness of the highlighting, a sensory awareness of color (e.g., sample 7.1), even though the color was a product of her own creation.

As shown in Table 1, seven (40.9%) of Rhea’s 22 creative seeing experiences involved the *deletion* of a detail (words, etc.). For example:

Sample 8.4: Rhea was sending a text message. At the moment of the beep, Rhea (60%) saw the vivid green-ness of the Send button (seen as a uniform bright green rectangle)—a sensory awareness of color. [On retrospection, Rhea recognized that the Send button actually has a prominent arrow, which Rhea was not at all seeing at the moment of the beep.] However, at the moment of the beep, Rhea (40%) did have some simultaneous but inchoate awareness that there was no arrow (when one should be there).

The missing arrow of sample 8.4 was not merely a figure-ground phenomenon, where the arrow-as-ground was seen dimly or out of focus; rather, Rhea saw no arrow at all.

Here is another example of deletion of detail:

Sample 7.5: Rhea was typing on her iPad. At the moment of the beep Rhea (50%) saw her uniformly black screen and was (50%) noticing in particular the black-ness (a sensory

awareness). [On retrospection, Rhea recognized that the screen actually had white characters displayed on it, which Rhea was not at all seeing at the moment of the beep.] At the moment of the beep, Rhea saw her screen as completely blank. In reality, as she noted in retrospection, Rhea's screen was black with white text. As in sample 8.4, the missing text was not a figure-ground phenomenon where words were seen dimly or out of focus; rather, Rhea saw no words or white text at all. However, *unlike* in sample 8.4, there was no at-the-moment-of-the-beep recognition, inchoate or otherwise, that something was amiss.

We have seen examples of creative seeing where Rhea inserted details that were not actually there, and where she deleted the details that were present. As shown in Table 1, four (18.2%) of Rhea's samples involved misinterpretation of details of reality. For example:

Sample 7.2: Rhea was walking and looking at the foam in her cup of tea. At the moment of the beep, Rhea (80%) saw a large number of circles that were in fact the result of popped foam bubbles; however, Rhea sees these as circles rather than (or at least more than) popped bubbles. This aspect is therefore on the border between sensory awareness (noticing the circle-ness of the bubbles) and creative seeing (seeing circles instead of bubbles). Furthermore, Rhea saw the sidewalk, a foot or less behind the cup, when in reality the sidewalk was three or four feet behind the cup. Therefore, we call this aspect a creative seeing. At the same time, Rhea saw the sidewalk moving behind the cup. Rhea saw the sidewalk to be moving past her, when in reality she herself was moving past the sidewalk. At the moment of the beep, Rhea had no recognition of the mistakenness of the sidewalk being *too close*, but she did have some sense of the mistakenness that the sidewalk was *moving*.

There were thus three creative-seeing aspects in this sample: circles instead of bubbles, the too-close sidewalk, and the sidewalk was seen as moving. These involved neither the insertion nor the deletion of details—the sidewalk was actually present. Rhea’s immediate perception involved the misinterpretation of these details.

### ***Relevant Attributes of Creative Seeing***

There were two attributes that existed alongside creative seeing that seemed relevant to the creative-seeing phenomenon: sometimes Rhea had some sense that there was something amiss in her perception; and sometimes Rhea played around with or purposefully manipulated her perception, with creative seeing as a result.

We will call Rhea’s at-the-moment sense that there was something amiss in her perception the *contemporaneous meta-awareness of creative seeing*. The degree of this meta-awareness ranged from not at all to inchoate. In two-thirds (14 of 22; 63.6%) of her creative seeings, Rhea had, at the moment of the beep, zero contemporaneous meta-awareness of the perceptual distortion. Recall sample 5.1, where Rhea saw *l-i-m-b* with too-wide spaces between the letters. Here, there was an actual distortion of perception (the spaces were seen as wide) but there was no simultaneous meta-awareness that anything about her seeing was distorted. That is, Rhea saw *l-i-m-b* as part of the world as the world is and the too-wide-ness was recognized only on retrospection. This is also the case in sample 7.5, where Rhea saw her iPad screen without the white characters displayed on it. Rhea realized only on retrospection that there were white characters on her iPad screen and did *not* have a simultaneous recognition that anything in her perception differed from the world as it is.

In one-third (8 of 22, 35.4%) of her creative seeing experiences, Rhea had some contemporaneous meta-awareness of creative seeing. For example, in sample 7.2, Rhea saw



(creatively) that the sidewalk was moving (rather than Rhea moving along it); Rhea had some slight meta-awareness that her perception was amiss but could not elaborate on how the sense was present to her. At the same time, Rhea saw (creatively) the sidewalk to be right behind her cup when in reality, it was several feet away, but she had no meta-awareness of the mistakenness of that perception.

Thus, there was a range of clarity of this contemporaneous meta-awareness, ranging from no meta-awareness at all (14 of 22; 63.6%) to inchoate (7 of 22; 31.8%) to quite specific (1 of 22; 4.5%).

However, Rhea sometimes did have a contemporaneous meta-awareness of distortions—a simultaneous recognition of the existence of some kind of perceptual anomaly. Almost always (7 out of the 8 creative seeings that involved meta-awareness), that recognition was inchoate. One example of inchoate meta-awareness was in sample 10.1, the blue highlighting sample. Recall that at the moment of the beep, Rhea saw blue highlighting that didn't exist in reality; simultaneously, Rhea was somehow aware that *something* was not quite right about what she was seeing, but, at the moment of the beep, she did not recognize *what* was amiss. Only on retrospection did she notice that the blue highlight was not present in reality. The missing arrow of sample 8.4 was very similar: she inchoately grasped that something was amiss, but she did not know what was missing until later consideration.

There was one instance where Rhea's contemporaneous meta-awareness was quite specific. Recall in sample 7.2, there were three creative-seeing aspects in this sample: circles instead of bubbles, the too-close sidewalk, and the sidewalk was seen as moving. Out of these three aspects, only the sidewalk seen as moving had meta-awareness. In addition, this meta-awareness was quite specific. That is, this meta-awareness was not at all inchoate: Rhea

recognized at the moment that the movement of the sidewalk was not correct—that she should have perceived herself as moving along the sidewalk. Note that Rhea’s seeing was incorrect (creative), even though Rhea recognized that the seeing was incorrect.

Thus, there was a wide range of meta-awareness of creative seeing, ranging from not at all to quite specific.

The second of Rhea’s relevant attributes of creative seeing involved playing around with or purposefully manipulating her perception, with creative seeing as a result. DES refers to this as the *doing of* creative seeing. That is, Rhea directly and consciously manipulated what she saw in the world to cause a creative seeing experience. As shown in Table 1, three (13.6%) of Rhea’s 22 creative seeing experiences involved the doing of what she was creatively seeing. For example:

Sample 8.1: Rhea was looking at a paragraph of words on a page. At the moment of the beep, Rhea noticed the blurriness of the blurry page she was reading. [Before the beep, Rhea had intentionally made her vision blurry (possibly by relaxing her eye muscles), but this intention was not in her experience at the moment of this beep; experientially, she saw a page that was itself blurry.]

That is, Rhea had intentionally altered her visual perception, making it blurry on purpose. Here is another example of the doing of creative seeing:

Sample 11.2: Rhea was looking at her TV. At the moment of the beep, Rhea saw the blueness (of the power light on her TV), a sensory awareness. Simultaneously she saw a second TV; but the second TV was located a few inches up and to the left of the original. That is, she was now seeing, at the same time, two TVs, both of which seemed to be located in reality—this was a creative seeing. The two TVs were identical, both with

particular attention on the blueness of the light (a sensory awareness of something that is creatively seen). Simultaneously she was somehow inchoately aware (a meta-awareness of creative seeing) that this second TV-seeing and its position was her own creation. The three simultaneous aspects (the first TV with its blue light, the second TV with its blue light, and the meta-awareness) were all equally salient portions of Rhea's experience. Rhea perceived the second TV as part of the external world, not a figment of her imagination or a visual image. But somehow simultaneously, Rhea was also aware that she had created this second TV and was in the process of creating this at the moment of the beep.

Thus, we have seen that Rhea sometimes interferes with or manipulates her own perceptions, with creative seeing being the result.

Overall, Rhea had three types of creative seeing: insertion, deletion, and misinterpretation of details. Further, Rhea's insertion-type creative seeing would occasionally also have additional sensory awareness of that creatively inserted detail. In addition to types of creative seeing, there were two relevant attributes that existed alongside Rhea's creative seeing: meta-awareness of creative seeing (ranging from none to inchoate to quite specific) and doing of creative seeing (where Rhea intentionally manipulated her own perceptions resulting in a creative seeing experience).

Note that this insertion/deletion/misinterpretation categorization of creative seeing is relatively arbitrary. Some samples did not fit into a single category. For example:

Sample 6.3 - Rhea was on a Zoom call with her mom while her mom curled her hair with a curling iron. At the moment of the beep, Rhea (80%) saw the black-ness of a cylindrical shape (that happened to be a curling iron). At the same time, she (20%) noticed (her mom's) hand (on the curling iron).

Rhea's creative seeing in sample 6.3 might be described as either a deletion or misinterpretation of details: *deleting* the curling iron-ness from her experience, with only the cylindrical shape remaining; or as misinterpreting a curling iron to be a cylindrical shape.

Here is another example:

7.6 - Rhea was looking at the word *FALL*. At the moment of the beep, Rhea (70%) saw the vivid-red-ness of the *LL* (of *FALL*). At the same time, Rhea (30%) saw the entire word *FALL*. Rhea saw *LL* was more vivid than the *FA*. In reality, all the letters of *FALL* were uniformly vivid.

In sample 7.6, Rhea's creative seeing might be described as the insertion of details or misinterpretation of details: Rhea could have *inserted* the more vivid red to *LL*, or she could have misinterpreted the vividness of *LL*.

## **SIPS**

The Structured Interview for Psychosis Risk Syndromes (SIPS) was used as an objective measure of whether it would be reasonable to consider Rhea's creative seeings as being the result of psychosis (or of a process that might lead to the risk of psychosis). There are five SIPS scores relevant here. Rhea's SIPS Positive Symptoms Severity Scale score of 0 indicated an absence of delusions, hallucinations, and disorganized speech. Rhea's SIPS Negative Symptoms Severity Scale of 0 indicated an absence of anhedonia, avolition, and difficulty feeling emotions. Rhea's SIPS Disorganization Symptoms Scale score of 0 indicated the absence of odd behavior or appearance, bizarre thinking, and impairments in personal hygiene. Rhea's SIPS General Symptoms Scale score of 3 indicates some presence of other non-psychotic general symptoms of pathology (intermittent frustrations and anxieties with no effects on behavior) that are typical of

undergraduate college students such as Rhea. These scores can range from 0-6 with higher scores indicating the presence of symptoms at higher severities.

Rhea's SIPS Global Assessment of Functioning (GAF) score of 84-87 (on a scale from 1 to 100, with higher scores indicating greater levels of functioning) indicates that Rhea has minimal symptoms that might interfere with overall psychological, social, and occupational functioning. That is, this score does not indicate abnormal functioning.

Based on Rhea's overall scores and reports, Rhea endorsed normal overall functioning except for one past major depressive episode (currently in remission). She did not endorse symptoms that would suggest a current psychiatric diagnosis or lifetime presence of any psychosis-risk syndrome including Schizotypal Personality Disorder.

The SIPS also includes a series of Yes/No questions about overall diagnostic and current status of psychosis-risk syndromes, which together are called the Criteria for Prodromal States (COPS). Rhea did not meet criteria for any psychosis syndromes (i.e., Brief Intermittent Psychosis Syndrome (BIPS), Attenuated Positive Symptom Syndrome (APSS), and Genetic Risk and Deterioration Syndrome (GRD)).

In particular, Rhea responded "No" to the SIPS prompt: "Do you ever see things that others can't or don't seem to see?" (McGlashan et al., 2001 p. 18).

## **Chapter 7: Discussion**

Rhea's creative seeing experiences are the primary interest of this study. However, to understand qualities of Rhea's creative seeing we must first understand her sensory awareness. Thus, we will begin discussing Rhea's sensory awareness and her other five frequent phenomena experiences.

### **Five Frequent Phenomena**

Recall, the five frequent phenomena (5FP) are sensory awareness, inner speaking, inner seeing, feelings, and unsymbolized thinking. (Heavey & Hurlburt 2008; Heavey et al., 2019). We will discuss those in the order of salience in Rhea's samples.

Sensory awareness is the direct apprehension of some sensory aspect (of the body, outer environment, or inner environment) without concern for its instrumental role (Heavey & Hurlburt, 2008; Hurlburt et al., 2009). Heavey & Hurlburt (2008) found that sensory awareness occurs in approximately 25% of all moments of waking experience, with some individuals experiencing sensory awareness in nearly all their waking moments, others rarely or not at all, and others somewhere in between. Sensory awareness was the most salient of the 5FP in Rhea's experience occurring 90.3% of the time.

Rhea's sensory awareness experiences involved visual aspects 51.7% of the time with 96.6% of these visual sensory awareness experiences involving color. For example, she was caught up by the white-ness of the car in front of her (in sample 7.1). It was the white-ness that occupied her; the car-ness was not of interest. A similar phenomenon occurred in sample 10.3, where she noted the green-ness of the pretzels. It was the green that occupied her; the pretzel-ness was not of interest. Similarly, in sample 10.1, she apprehended the blue-ness of the

highlight; it was the blue that was attracting, not the highlighting *per se*. Furthermore, in sample 10.1, she had created the highlighting (an example of creative seeing).

Rhea's sensory awarenesses sometimes, although not nearly as frequently, were non-visual (auditory, temperature, bodily). For example, in sample 10.3 she heard and was attentive to the baby's laugh, in sample 12.2 Rhea felt the coldness of the blackberries on her tooth, and in sample 12.4 Rhea felt her cheeks rise as a result of her smile.

In short, the overwhelming majority of Rhea's experiences involved sensory awareness. Mostly these were of color, but occasionally of non-visual aspects.

Rhea's second-most frequent of the 5FP experiences was inner speaking, the experience by an individual of speaking with no external sound produced (Hurlburt et al., 2013). Prior to DES sampling, Rhea believed that her experience consisted primarily of inner speaking. On sampling day 1, Rhea reported inner speaking on three of five samples, and on days 2 and 3, nine out of ten of Rhea's samples included an innerly spoken experience. However, on sampling days 4 through 11, none of her experiences involved inner speaking. But then day 12 involved inner speaking in three of her six samples. There are three potential explanations for these broad swings of frequency.

First, DES participants commonly report frequent inner speech on their first few sampling days but later have little or no inner speaking. DES understands that as suggesting that inner-speaking reports early in sampling reflect the widespread presupposition that inner speech is ubiquitous, regardless of actual experience. The first few DES interviews, with their iterative training sessions (Hurlburt, 2011b), often help participants learn to bracket their presuppositions: Participants discover that the experience that was ongoing at the moment of the beep did not involve inner speaking, and the frequency dramatically declines. Applied to Rhea, this view

suggests that her early inner-speaking reports were presuppositional. However, that does not explain the resurgence of inner speaking on day 12.

Second, Rhea's inner speaking was tightly tied to sensory awareness: Five out of nine of Rhea's inner speakings involved sensory aspects on sampling days 2 and 3, and two out of three inner speaking from day 12 are related to sensory awareness. That is important because DES participants frequently do not report sensory awareness on their first few sampling days, and when reports of sensory awareness do occur, they are often couched as if they were innerly spoken. Rhea's day 2 and 3 sensory awarenesses had that characteristic (e.g., innerly speaking "That's bright" in sample 3.1; "that's pretty!" in sample 3.3). It is possible that as Rhea became more able to identify her sensory awareness, she no longer confused them with inner speakings. However, that alone does not explain the resurgence of inner speaking on day 12.

Third, perhaps the high frequency on sampling day 12 is simply the result of random sampling variability. On this view, the frequency of sensory awareness did not decline dramatically after the first few days; we merely had a run of days with randomly lower frequencies. This seems unlikely given the number of sampling days involved.

It is noteworthy that we had originally planned to sample with Rhea for ten days. Had we done so, we would have seen inner speaking decline to zero after the third day and stay there, accepted the first two explanations, and concluded that Rhea did not engage in inner speech, and that inner speaking reports on days 2 and 3 were a result of presuppositions about inner speech and the difficulty describing sensory awareness. However, because our sampling included the 12th day, we conclude that inner speaking was an occasional characteristic of Rhea's experience.



Thus, we conclude that Rhea had much less inner speech than she had believed prior to starting participation in DES, and when she did not innerly speak, it was almost always a straightforward captioning of sensory awareness.

Rhea experienced inner seeing in three of her 62 DES samples. All events occurred while her eyes were physically closed, less than the 25% that Hurlburt and Heavey (2008) suggest. In general, in DES, inner seeings occur with the eyes open while participants are engaged in other activities. Rhea had no such inner seeings. She did experience external seeings nearly all of the time, nearly always resulting in sensory awareness or creative seeing.

Rhea had virtually no experiences of feelings or unsymbolized thinking. Hurlburt & Heavey (2008) note that such experiences usually occur in about 25% of sampled experiences.

### **Creative Seeing**

Most of Rhea's experiences were visual (46 of 62). That much of her experience was visual was surprising to Rhea, who had believed prior to sampling that her experience was primarily of inner speech. Of those visual samples, 22 (47.8%) were what DES calls creative seeing, a distortion of reality, a perception apprehended as being of the world as it is. Prior to sampling, Rhea had no idea that she had this kind of experience.

Creative seeing is rare in DES, so a high frequency of creative seeing should be considered unusual. Furthermore, collecting descriptions of creative seeing had not been a particular aim of sampling with Rhea, which was, as training for a graduate student, to discover whatever phenomena were present for Rhea in her everyday experience. We did not know (and had no way of knowing) prior to sampling that Rhea would experience creative seeing at all.

Creative seeing emerged over the course of multiple sampling days as a result of the DES iterative procedure. We saw no instances of creative seeing on sampling days 1 and 2, and these

experiences were described more frequently in the second half of sampling (8 instances days 1-6; 15 instances days 7-12). We suspect this occurred as a result of the DES iterative process, which trains individuals to apprehend their pristine inner experience with higher and higher fidelity.

Experiences become creative only on retrospection *after* the beep. At the *moment* of the beep, a creative experience seems like an ordinary perception of the world, an apprehension of the world as it is. Therefore, for Rhea to notice a creative experience requires that Rhea has the original perceptual experience itself and, a short time later, that Rhea has some sort of discrepant comparison of that experience with a new (that Rhea takes as correct) perception of reality. A method similar to DES is particularly adept at isolating individual moments and interrupting these ongoing moments to provoke retrospection. By contrast, for example, a retrospective questionnaire would not likely be able to identify particular moments and their immediate successors with sufficient granularity to identify creative seeing.

Occasionally, Rhea had meta-awareness (usually an inchoate recognition) at the moment of the beep that something in her immediate perception was amiss. The meta-awareness of interest here is contemporaneous with the at-the-moment-of-the-beep experience and is *not* merely a feature of retrospection; the meta-awareness of interest here, if it occurs, occurs at the moment of the beep. (All creative experience requires some retrospection *after* the beep: in the moments following the experience, Rhea must (retrospectively) realize that the original experience had been distorted.) The point here is that of Rhea's 23 creative experiences, some (8) but not all involved a contemporaneous meta-awareness that something was amiss. That is, two-thirds of Rhea's creative seeings occurred with no contemporaneous recognition that something was amiss. But on the other hand, that means she did recognize a discrepancy, at least to some extent, in about a third of her creative seeings.

Rhea engaged in doing of creative seeing; that on occasion she intentionally played with or manipulated her perception to distort reality resulting in creative seeing. Recall sample 11.2, when Rhea saw two TVs simultaneously, one existing in reality, one creatively seen. Whereas the originally creatively seen TV was located above and to the left of the original TV, Rhea noted subsequently that she returned to this sample, playing with her ability to creatively see the TV either in the same above-left position or in a variety of other similar positions— farther up, farther left, and so on. Rhea noted while describing this experience this this sample brought her an increased awareness that in her everyday environment, she occasionally engages in doing of creative seeing and that she had noticed this experience prior to sampling—that she has done this kind of thing since she was a child.

Creative seeing is a subset of creative experiences. That is, creative seeing only involves a distortion of vision. However, creative experiences are encountered in DES through other sensory modalities and Rhea has one such instance: a *creative* tactile experience in sample 6.5. Rhea was holding a cold water bottle and felt the coldness on her fingertips. The water bottle was actually touching Rhea's entire hand, including her palm. Despite this, Rhea was not feeling the coldness on her palm. A second later, on retrospection triggered by the beep, Rhea noticed that she should have felt coldness on her entire hand, not just on her fingertips as she had at the moment of the beep. Thus, creative experiences are not only visual phenomena; they can occur through other sensory modalities. For Rhea, nearly all were visual.

Note that creative seeings are not illusions. An illusion is a specific feature of the environment that results in distorted or erroneous perceptions perceived by most people. For example, a mirage is an illusion. A mirage is erroneously perceived by most people as water on the roadway ahead; the conditions of a mirage (layers of air above a heated highway) can be

specified, and the mirage is perceived by most people. The Müller-Lyer illusion is the result of the geometry of the arrows—most people erroneously perceive the one line as being shorter than the other. By contrast, creative seeings are erroneous or distorted perceptions that would *not* typically be seen by another person and are *not* the result of any specifiable geometry or physicality. For example, in sample 10.1, Rhea saw the blue highlighting on a page where there was no blue highlighting at all. There was no reason that she or anyone else should have seen blue highlighting.

Creative seeings are different from sensory awareness in that whereas sensory awareness involves a particular focus on a sensory aspect, sensory awareness does not involve any perceptual distortion. For example, in sample 10.3, Rhea was focused on the green-ness of her pretzels. The pretzels were indeed green in the real world; Rhea was particularly interested in the green-ness as it existed in reality but did not see her pretzels as darker or brighter green than they were; that is *not* creative seeing. However, for Rhea, sensory awareness and creative seeing were interwoven with Rhea often experiencing sensory awareness of things she creatively saw. In the blue-highlighting sample 10.1, Rhea was not only creating the highlighting where none existed, but beyond that she had a sensory awareness of that highlighting—she was focused on the blue-ness of the highlighting that she herself had created.

In an interview a few months after concluding her sampling, Rhea reported that she no longer experienced creative seeing unless she engaged in doing of creative seeing. We do not know (and have no way of knowing without additional sampling) whether this retrospection reflects an actual absence of creative seeing without intention or whether she actually continues to have creative seeings but no longer had a method adequate to notice them. It is possible that a technique like DES, with its immediate retrospection, is necessary to discover creative seeing—

without it, distortions may well occur but are not recognized as distortions—they seem like correctly real aspects of the world.

### **Creative Seeing vs. SIPS**

Creative seeing involves distortions of reality, seeing things that would not be seen by others. Therefore, creative seeings might be considered hallucinations and this is potentially a symptom of a serious mental illness. Rhea herself did not seem to manifest any characteristics of serious mental illness, but she had not undergone any psychological evaluation with us or with anyone else. Because, when considering serious mental illness, Rhea described only hallucinatory-like (creative seeing) experiences, it is reasonable to wonder whether she might have characteristics similar to those in some very early, attenuated, or prodromal phase of psychosis. To explore the question, we invited a skilled clinician to administer the Structured Interview for Psychosis-risk Syndromes (SIPS; Miller et al., 1999).

On the SIPS, Rhea endorsed nothing related to any current mental illness. Of specific interest here, Rhea responded “No” to the SIPS prompt: “Do you ever see things that others can’t or don’t seem to see?” (McGlashan et al., 2001 p. 18).

Rhea’s “No” to the SIPS prompt: “Do you ever see things that others can’t or don’t seem to see?” seemed at odds with a main finding of her DES sampling: she had frequent creative seeing, which by definition, involved seeing things that other people don’t see. To explore that, the present author conducted (the day after the SIPS administration) a debriefing interview to follow up on Rhea’s responses to SIPS prompts, taking her DES results into consideration.

Rhea’s response was particularly surprising given that the SIPS was administered after she had completed DES sampling, where she frequently described (and discussed in detail) seeing things that others would not see. Due to the discrepancy between Rhea’s SIPS and DES

results, we conducted a follow-up interview a few days after the SIPS was administered to clarify her response. Rhea described being aware of her creative experiences only during her time sampling with DES. She acknowledged that those creative seeings directly involved seeing things that others would not see. However, Rhea reported that she only apprehended these experiences while sampling with DES, so she considered her “No” response to the SIPS to be an accurate characterization of her overall experience.

As an exploratory exercise, we rescored Rhea’s SIPS as if she had responded *Yes* to the SIPS prompt “Do you ever see things that others can’t or don’t seem to see?” (McGlashan et al., 2001, p. 18) thus recognizing that what she saw in her creative seeings would not be seen by other people. Under that rescoring, her Positive Symptoms Severity Scale P.4. rating would increase from 0 to 3, indicating moderate perceptual abnormalities. That increase in symptom severity would lower her Global Assessment of Functioning (GAF) rating from 84-87 to 58-60, classifying her as a person with moderate symptoms of pathology. Rhea would still not meet DSM-V criteria for Schizotypal Personality Disorder but would be endorsing the symptom for unusual perceptual experiences. Under the Criteria for Prodromal States (COPS), Brief Intermittent Psychotic Syndrome (BIPS), and Genetic Risk and Deterioration Syndrome (GRD) would still not be met; however, Rhea would have met the criteria for Attenuated Positive Symptoms Syndrome (APSS). In other words, had Rhea accepted her DES creative seeings as “see[ing] things that other people don’t see,” her score on the SIPS would have identified Rhea as someone who had mild psychotic symptoms that had not reached intensity levels of psychosis (Miller et al., 2003).

The SIPS is as sensitive a procedure that exists to assess mild or prodromal mental illness symptoms. So, we conclude that, at least for Rhea, the DES procedure discovers experiential

distortions at a level substantially more sensitive than standard psychometrically valid psychological assessments. It remains to be seen whether that sensitivity allows us to discover something *prior to* what the SIPS would discover—an earlier form of the prodrome—or whether creative seeing is unrelated to mental illness.

## Chapter 8: Implications

Colors played a prominent role in Rhea's inner experience. This was similar to the results found in Hurlburt (1990) examining the inner experience of individuals diagnosed with schizophrenia. There, for example, Jennifer was interested in the red-ness of her nail polish in a way very similar to the way Rhea was interested in the green-ness of the pretzels in sample 10.3. We don't know if that similarity is in any way meaningful or simply coincidence. This is, we are not saying that Rhea's sensory awareness is indicative of psychosis; however, if Rhea were to develop a serious mental illness 10 years from now, her experiences apprehended during DES may tell us something about the kinds of experiences people have before developing serious mental illness. Sensory awareness of color was the only characteristic of experience Rhea shared with any of the Hurlburt (1990) patients with schizophrenia.

Our main interest is in Rhea's creative seeings. We have seen these characteristics: (1) creative seeing is a distortion of reality; (2) creative seeing occurred frequently for Rhea; (3) the existence and frequency of creative seeing was a surprise to Rhea; (4) Rhea noticed these distortions only on retrospection (while they are happening, Rhea has no sense that what she sees is distorted in any way); (5) she was able to notice these distortions only when retrospection was triggered immediately following the experience; and (6) the SIPS (arguable the most sensitive psychometric procedure in this area) did not identify these distortions of reality.

Creative seeing is, by definition, a distortion of reality; distortion of reality is a characteristic of some severe mental illness (e.g., schizophrenia), but our observation of Rhea and her scores on the SIPS indicate that Rhea does not have any severe mental illness. Therefore, it is reasonable to ask whether creative seeings may be (a) typical experiences that are frequent in many individuals in the larger population who have no serious mental illness implications; (b)



experiences characteristic of Rhea but relatively rare in the larger population; (c) creative seeings are not really frequent phenomena for Rhea; (d) a very early sign of some serious mental illness; and (e) DES may be mistaken in its discovery of creative seeing. This is an  $N = 1$  case study, so we cannot provide a definitive answer to which of these are operative, but the discussion might be informative.

If (a) creative seeings are frequent in many individuals in the population, we must explain why they are not discussed in the literature. Creative seeing has been described only by DES, and DES-type studies are rare. Therefore, it is highly likely that some individuals have creative-seeing experiences and are completely unaware of this ongoing phenomenon, and therefore creative seeing may well be overlooked by psychological science.

If (b) creative seeings are relatively rare in the population but frequent in Rhea (and assuming we have a sufficient method, then we can ask whether there are some number of others who also have similar creative experiences. If so, these people who distort reality may have personality characteristics in common—it seems reasonable to suspect that people who perceptually distort reality have other characteristics, but further research would be needed. That research would be time-consuming, requiring a method like DES.

If (c) creative seeings are not really frequent phenomena for Rhea, her high frequency might have been the result of small sample fluctuation: we apprehended her creative seeing only over a relatively short period of time. Perhaps, for whatever reason, that was not typical of Rhea's overall life. Perhaps Rhea's retrospections were inaccurate. Perhaps the investigators exaggerated or misunderstood Rhea's experiences. Perhaps participation in DES distorted Rhea's in-the-wild experiences. Replication of this kind of study with different participants and different investigators is required.

If (d) creative seeing might be a very early sign of serious mental illness, then we need further research would investigate creative seeing in a large number of individuals, perhaps those who might be considered at risk for serious mental illness, perhaps utilizing screeners to briefly assess individuals at risk for developing a psychotic disorder. One such example was developed by the Prevention through Risk Identification, Management, and Education at Yale University (PRIME Screen-Revised; PS-R; Kobayashi et al., 2008). The identification of creative seeing might provide more sensitivity than existing measures for identifying serious mental illness than those currently existing (i.e., SIPS), and therefore, may be able to provide an earlier hint of possible serious mental illness. Early intervention has been shown to produce better treatment outcomes (McFarlane et al., 2014; Bird et al., 2018). Maybe it is possible to discover the link between creative seeing and the development of a serious mental illness. Perhaps if creative seeing is identified, early intervention can break the link between creative seeing and later development of a serious mental illness. These early interventions could be biochemical, behavioral, or experimental. Moreover, if early interventions were experiential, perhaps there is a way of maximizing emphasis on contemporaneous meta-awareness. Perhaps the doing of creative seeing is a good thing, allowing individuals to recognize and intervene with distorted perceptions. On the other hand, the doing of creative seeing may be a bad thing; it is possible that this type of practice increases the frequency of distortions.

If (e) DES may be mistaken in its discovery of creative seeing. Perhaps Rhea had detected that DES investigators were, for some reason, interested in descriptions of experiences involving creative seeing. Thus, she changed the descriptions of her experience to involve creative seeing frequently throughout sampling. Though this is possible, Rhea was asked open-ended questions, allowing her to provide us with any descriptions of experience and limit her

presuppositions. She also sampled and interviewed over multiple days with multiple DES investigators to limit the possibility of demand characteristics.

Currently, creative seeing has been discovered only by DES. DES is a time-and-skill-intensive method, and it is reasonable to ask whether there are methods of exploring creative seeing other than by DES. We have noted that Rhea was able to apprehend creative seeing only when retrospection was triggered immediately following the experience. That suggests that participation in something like DES (with its immediately-respond-to-random-beeps skills) may be necessary to discover creative seeing. If psychological science wishes to know whether creative seeing is frequent, it may have to invest in many DES-type studies. By “DES-type” study, we mean a study that provides an external stimulus that provides a signal to *retrospect right now*; that collects its data with a minimum of delay; and that uses an adequate interview method that can notice distortions of reality. This is an  $N = 1$  study, but we note that Rhea herself, when interrogated by questionnaire and retrospective interview did not notice the existence of creative seeing. It may therefore be that creative seeing is discoverable *only* by a technique such as DES.

Because this study involved only one participant; we cannot yet know the broad implications of this study. Suppose that, in a few years, we discover that Rhea developed psychotic symptoms or a psychotic disorder. In that case, this study would suggest that creative seeing might indicate early stages of psychosis development and that DES might be able to detect symptoms of psychosis earlier in the psychotic process than an interview technique such as the SIPS. If that turns out to be the case, substantial more study would be appropriate to determine whether it would be useful to incorporate something like DES into the examination of prodromal symptoms of psychosis. On the other hand, if Rhea *does not* develop psychotic

symptoms or a psychotic disorder within the next ten years, this study might suggest that perceptual distortions can occur for typically functioning individuals and that these experiential distortions might *not* be a fundamental aspect of psychosis. Clearly, it would be valuable to follow Rhea well into the future.

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## Curriculum Vitae

Amber Goto

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### Education

University of Nevada, Las Vegas (UNLV)

**Master of Arts (MA), Clinical Psychology** | Current; Anticipated: June 2024

**Doctor of Philosophy (Ph.D.) Clinical Psychology** | Current; Anticipated: May 2027

University of Nevada, Las Vegas (UNLV) Cum GPA: 3.83 | Aug 2018 – May 2022

Bachelor of Arts in Psychology GPA: 3.88

Bachelor of Science in Kinesiology GPA: 3.76

University of Hawaii at Manoa | Aug 2017-May 2018

Bachelor of Science in Kinesiology and Rehabilitation Sciences GPA 4.0

### Research Interests

Inner experience, examining conscious experience, interpersonal process therapy, cognitive-behavioral therapy.

### Research Presentations

Salva, C. E., Kuwabara, H. C., Goodwin, G. J., **Goto, A.**, Ross, S., Kinsora, T., & Allen, D. N. (2023). Comparing bilingual and monolingual baseline post-concussion symptom scale network structures. *Accepted as a traditional poster at National Academy of Neuropsychology annual conference. Philadelphia, PA.*

Gates-Woodyatt, J. J. Ringdahl, E., Standridge, J., Collins, D., **Goto, A.**, & Allen, D. N. (2023). Social Adjustment and Functioning In Serious Mental Illness is Predicted by Social Cognition. *Accepted as a traditional poster at National Academy of Neuropsychology annual conference. Philadelphia, PA.*

Phrathap, D., Kowal, I., Janeo, M., **Goto, A.**, Tsalafos, A., Huslig, S., Granstrom, I., Cohen, M., Donohue, B. (2022, October). *Piloting an Optimization-Based Performance Imagery Intervention to Concurrently Address Sports Performance and Mental Health with an Adolescent Athlete.* AASP 2022 Annual Conference, Dallas, Texas.

Phrathap, D., **Goto, A.**, Tsalafos, A., Granstrom I., Otto, T., Lellos, L., Macabali, M., Holmes, K., & Donohue, B. (2022, October). *A Controlled Evaluation of a Sport-Specific Performance Optimization Program in a Biracial Black and White Athlete Diagnosed with Social Anxiety Disorder and Agoraphobia.* AASP 2022 37th Annual Conference, Fort Worth, Texas.

Phrathap, D., Kowal, I., Janeo, M., **Goto, A.**, Tsalafos, A., Huslig, S., Granstrom, I., Cohen, M., Donohue, B. (2022, October). *A Controlled Case Evaluation of a Family-Based Optimization Intervention Implemented through Video-Conferencing to Address ADHD and Oppositional Defiant Disorder in an Adolescent Athlete*. GPSA 2021 Annual Research Forum, Virtual.

Rogers, E., Kuwabara, H., Goodwin, G., Moore, S., Hopkins, N., **Goto, A.**, Maietta, J., Ross, S., Kinsora, T., & Allen, D. N. (2021, November). *Comparison of baseline and post-concussion ImPACT performance in Spanish-English bilingual and English monolingual athletes*. [Poster presentation] Neuropsychology and Neurorehabilitation 41st Annual Conference

Phrathap, D., Kowal, I., Janeo, M., **Goto, A.**, Tsalafos, A., Huslig, S., Granstrom, I., Cohen, M., Donohue, B. (2021, October). *A Family-Based Optimization Intervention Implemented through Video-Conferencing to Address Major Depressive Disorder in a Latina Adolescent Athlete During Covid-19*. AASP 2021 Annual Conference, Virtual.

Phrathap, D., Kowal, I., Janeo, M., **Goto, A.**, Tsalafos, A., Huslig, S., Granstrom, I., Cohen, M., Donohue, B. (2021, October). *A Controlled Case Evaluation of a Family-Based Optimization Intervention Implemented through Video-Conferencing to Address ADHD and Oppositional Defiant Disorder in an Adolescent Athlete*. AASP 2021 Annual Conference, Virtual.

## **Research Experience**

### **Psychology Graduate Research Assistant | Present**

*University of Nevada, Las Vegas Inner Experience Sampling Lab*

Supervisor: Dr. Russell Hurlburt

Responsibilities:

- Conduct sampling interviews and data collection
- Conduct literature reviews
- Prepare research posters summarizing research findings, methodologies, and conclusions for presentation at conferences

### **Psychology Graduate Research Assistant | Present**

*University of Nevada, Las Vegas Neuropsychology Research Program Lab*

Supervisor: Dr. Daniel Allen

Responsibilities:

- Administration of assessments and data collection
- Conduct Literature reviews
- Prepare research posters summarizing research findings, methodologies, and conclusions for presentation at conferences

### **Psychology Undergraduate Research Assistant | Aug 2020-May 2022**

*University of Nevada, Las Vegas Neuropsychology Research Program Lab*

Supervisor: Dr. Daniel Allen

Responsibilities:

- Coding of participant responses for statistical analysis
- Gathering articles for systematic review

**Psychology Undergraduate Research Assistant** | Jan 2020-May 2022

*University of Nevada, Las Vegas Reasoning and Memory (RAM) Lab*

Supervisor: Dr. David Copeland

Responsibilities

- Creating questions for future memory tests will help establish valid tests to measure memory processing
- Coding of participant responses for statistical analysis
- Gathering literature review for graduate student research

**Psychology Undergraduate Research Assistant** | Jan 2020-May 2022

*University of Nevada, Las Vegas The Optimum Performance Program in Sports (TOPPS) Lab*

Supervisor: Dr. Bradley Donohue

Responsibilities:

- Lead systematic review of articles about diverse youth athletes and mental health.
- Literature review about adolescents and substance use disorders
- Project data management with SPSS
- Disseminating interventions to community members
- Intervention integrities

**Psychology Undergraduate Research Assistant** | Jan 2020-Aug 2020

*University of Nevada, Las Vegas Diagnosis of Irritability, Mood and Emotions (DIME) Lab*

Supervisor: Dr. Andrew Freeman

Responsibilities:

- Observing participants through graduate student research study
- Conducting structured clinical interviews for data collection
- Data analysis and transcription

**Psychology Undergraduate Research Assistant** | Jan 2020-May 2020

*University of Nevada, Las Vegas Music Lab*

Supervisor: Dr. Erin Hannon

Responsibilities:

- Recruiting participants for graduate student research
- Principal research assistant on Child EEG study team
- Data management on child beat perception research team
- Use of audacity for data collection purposes

## **Clinical Experience**

**University of Nevada, Las Vegas PRACTICE** | Present

*Practicum Student* | *Individual Therapy*

Supervisor: Dr. Tara Raines

Responsibilities:

- Conduct weekly individual therapy sessions.
- Create treatment plans every 90 days.
- Complete bi-weekly clinical intake interviews for new clients and develop diagnostic impressions and rationales.
- Administer and interpret symptom assessments.
- Participate in weekly, interdisciplinary case conferences with the treatment team.
- Attend weekly supervision meetings.
- Attend weekly staff meetings.

**University of Nevada, Las Vegas PRACTICE | Present**

*Practicum Student | Group Therapy | CBT-Skills Adult Group*

Supervisor: Dr. Amelia Black

Responsibilities:

- Conduct weekly group therapy sessions.
- Debrief on client progress with supervisor.
- Prepare group interventions with supervisor guidance.

**University of Nevada, Las Vegas PRACTICE | Aug 2023-Feb 2024**

*Practicum Student | Group Therapy | Adolescent Group*

Supervisor: Dr. Amelia Black

Responsibilities:

- Conduct weekly group therapy sessions.
- Debrief on client progress with supervisor.
- Prepare group interventions with supervisor guidance.

**University of Nevada, Las Vegas Psychological and Testing Clinic (PATC) | Present**

*Practicum Student*

**Supervisor:** Dr. Tara Raines

**Responsibilities:**

- Complete neuropsychological and psychodiagnostic assessments
  - Confirmation of diagnoses
  - Academic accommodations
- Complete comprehensive psychological reports (2 per semester)
- Administer complete psychodiagnostic batteries (e.g., clinical interviews, cognitive assessments, etc.)
- Scoring and interpretation of results
- Providing diagnoses and recommendations for accommodations

## **Work Experience**

**Student Clinician | Present**

*University of Nevada, Las Vegas Rural Mental Health Outreach Program (RHOP)*

Supervisor: Dr. Daniel Allen

Responsibilities:



- Coordinate scheduling with Communities in Schools (CIS) coordinators
- Conduct individual therapy sessions with youth via telehealth
- Conduct telephone intervention and assessment with parents
- Research and training in trauma-focused cognitive behavioral therapy
- Research and education of rural communities in Northeastern Nevada

**Teacher's Assistant (PSY 210) | Aug 2022- May 2023**

*University of Nevada, Las Vegas*

Responsibilities:

- Liaison between students and professor
- Grading and entering grades for assignments and exams.
- Proctoring and administering exams.

## **Outreach Events**

**COLA Internship Fair**

*University of Nevada, Las Vegas PRACTICE Clinic*

Promoting psychological assessment services to students

**Nevada Hemophilia Foundation**

*University of Nevada, Las Vegas PRACTICE Clinic*

Promoting group therapy to community partners

## **Volunteer**

**Rape Crisis Center Las Vegas | May 2021-June 2021**

*Training to advocate victims of sexual assault*

Knowledge acquired: Sexual assault laws in Nevada, addressing victims in stressful situation.

Supervisor: Tia Stone

**Safe Nest | May 2021**

*Training to advocate for victims of Domestic Violence*

Responsibilities: Meet law enforcement at a victim's home and provide resources

Supervisor: Pamela Bernhart

**Athletic Trainer Mentee | Feb 2020-Mar 2020**

Supervisor: Bryan Lindl

**Volunteer Lab Assistant | Jan 2020-Feb 2020**

*Physiological demands during varied lengths of 2-provider CPR*

Responsibilities: Measure levels of lactate and breathing intensity before and after various intervals of CPR

Project Coordinator: Lee Doernte

**Volunteer Lab Assistant | Jan 2020- Feb 2020**

*Physiological and performance differences of CPR on hospital mattress versus hard surface*

Responsibilities: Measure levels of lactate and breathing intensity before and after CPR on various surfaces

Project Coordinator: Lee Doernte

### **Professional Affiliations**

Student Affiliate of the American Psychological Association (APA) | Present

Student Affiliate of APA Division 47: Sport, Exercise, Performance Psychology | Present

Student Affiliate of APA Division 40: Society for Clinical Neuropsychology | Present

### **Relevant Coursework**

- Research Methods
- Abnormal Psychology
- Social Psychology
- Developmental Psychology
- Psychopathology
- Anatomy and Physiology (I &II)
- Statistical Methods
- Exercise Physiology
- Cognitive Psychology
- Psychodiagnostic Assessment
- Psychological Intervention (Child &  
Adult)

## **Organizations/Activities**

**Psychology Club** | Sep 2019 - Apr 2021

*Member*

**Outreach Undergraduate Mentoring Program (OUMP)** | Oct 2019-May 2023

*Mentee*

*Mentor*

**Psi Chi** | Apr 2021-Present

*Member*