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June 25, 1998


Ms. Wendy Willis
Federal Public Defender for the District of Oregon
101 SW Main St.
Suite 1700
Portland, OR 97204

Re: Downs v. Hoyt
CV No. 96-900 HA

Dear Ms. Willis:

I have enclosed a copy of the report on the Downs case, my new addendum to the report, and a bill for my time reviewing the material and preparing the addendum. Please keep me informed on how things turn out and let me know if you need my testimony in a hearing.

Sincerely,



Ira Hyman, Ph.D.
Psychology Department
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Bellingham, WA 98225

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Addendum to Report for Ms. Wendy Willis (case Downs v. Hoyt; CV No. 960900 HA)

Ira Hyman, Ph.D.
June 24, 1998

This is an addendum to a report I made (dated August 24, 1997) concerning Christie Downs' memory of the shooting of her family. In that report, I noted that there was reason to be concerned about the reliability of the Christie's memory because she had been asked leading questions about the event for over six months. I have recently reviewed the following information: Paula Krogdahl's deposition dated March 30, 1998; letters from Dr. Peterson to Ms. Susan Staffel (9/14/83, 10/4/83, 12/22/83, and 3/12/84); reports by Dr. John Tracy concerning Christie's language abilities (6/23/83 and 8/24/83); Dr. Carl Peterson's deposition dated April 6, 1998 and April 10, 1998; and Susan Staffel's deposition dated March 31, 1998.

I find no reason to change my basic interpretation. Instead, the additional information increases my concerns that Christie's recollection of the shooting may be the result of six months of leading and suggestive questioning. There are two reasons for increased concern: Christie's language difficulties during the early interviews and Dr. Peterson's beliefs concerning memory in general and the facts in this case.

Christie's communication difficulties are made clear in the reports by Dr. Tracy and in Paula Krogdahl's deposition. In essence, she was limited to very short utterances and unable to communicate in complete sentences. This is a concern because it requires her interviewers to ask more questions to get any information -- including many yes or no questions that can be very suggestive, especially if asked repetitively. In addition, her limited responses mean that the interviewers are more likely to interpret her responses in ways consistent with their prevailing beliefs. Short, simple answers to complex questions are likely to not be completely clear. In this case, the listener must form an interpretation of what they believe the person means.

Dr. Peterson's beliefs about memory are clear in his deposition. When asked about memory, Dr. Peterson makes clear that he believes that the underlying memory is always there and that the client can eventually get back to the underlying memory. This runs counter to the majority of research on memory that shows that memories can be altered and that after this occurs it is difficult, if not impossible, to discriminate true from erroneous memories. In addition, in his letter to Ms. Staffel dated October 4, 1983, Dr. Peterson makes clear his concern that Christie's mother may have shot the children. When these two beliefs are combined, it means that Dr. Peterson believed that Christie would eventually remember that her mother shot her and her siblings. In the course of his therapy sessions with Christie, these beliefs would have been communicated to Christie and could be the source of Christie's eventual memory.

This was the possibility I noted in my earlier report, and the information I reviewed increases my concern that Christie's memory may be the result of suggestion.

Report for Ms. Wendy Willis (case Downs v. Hoyt; CV No. 960900 HA)

Ira Hyman, Ph.D.
August 24, 1997

In this case, Ms. Down's daughter (Christie) has made claims that her mother shot and killed her sister and wounded her and her brother. In reviewing these matters, I have searched for information that may indicate if the daughter's claim could be the result of suggestion rather than her memory of a real event. I have reviewed the materials sent to me by Ms. Willis: the police reports, Dr. Peterson's notes from therapy sessions, Dr. Peterson's testimony, Christie Downs' testimony at both the grand jury and the trial, and portions of the medical record regarding Christie Downs.

There are several questions about memory that are related to this case. In particular, there are basic issues concerning how memories are constructed, whether young children (ages 8) can remember experiences from several months earlier, how repeated questions and suggestion affect memory (particularly for children), and how emotion affects memory. An understanding of the scientific evidence concerning these questions may help in understanding this case. Thus I will first review the scientific research and then discuss how the research may be related to this case.

The Construction of Memories

Memory does not work like a videotape player. A person does not find the video for some event, put the video in some mental player, and then play back the memory. Instead memory is a constructive process. This construction takes place during three different stages: encoding, storage, and retrieval. Encoding takes place when a person first encounters some experience. People attend to part of the event and interpret the event based on their background knowledge. During storage the information is placed in the brain with other related information. During retrieval, people create a memory that is based on what happened, their interpretation of what happened, other information they have received, and suggestions presented during the interview. Errors can occur at each stage of the process (Anderson & Pitchert, 1978; Hyman & Rubin, 1990). During encoding, a person may misunderstand an event based on what they expect to see -- in this case that person will only later remember the misunderstanding. During storage, the information may be replaced by new information. During retrieval, errors occur because people use information from a variety of sources to construct a memory.

Errors in memory have been demonstrated in every material that psychologists have asked people to remember: words presented in a word list (Roediger & McDermott, 1995), sentences (Bransford & Franks, 1974), songs (Hyman & Rubin, 1990; Rubin, 1995), short stories (Bartlett, 1932), the items in a room (Brewer & Treyens, 1981), autobiographical events (Barclay & DeCooke, 1988; Conway et al., 1996; Neisser & Harsch, 1992), staged crimes (Loftus, 1979), and people (Brown, Deffenbacher, & Sturgill, 1977). In general, the errors are usually small and people tend to get the gist, or basic ideas, right. With respect to personal memories people tend to make mistakes that are similar to things that really happened and are less likely to make mistakes that are very large -- provided that there is little suggestion and limited pressure to remember (Barclay & DeCooke, 1988; Conway et al., 1996; although there are some exceptions, see Neisser & Harsch, 1992). In situations in which suggestions are made and in which there is pressure to remember, the size and number of errors will increase (see below for a brief review of this research).

Long-term Memory in Children

Children can remember events that happened up to several years previously. For several years, Fivush and her colleagues have been studying children's memories of unique experiences (events that are rare, such as the only trip to a particular museum, to the zoo, or to Disneyland). What they have found is that children can remember such events for several years. In recent work, Fivush and Schwarzmuller (1996) found that eight year old children can remember events that occurred when they were three years old if someone reminds them of the event. When they asked the mothers if the information provided by their children was accurate, the mothers confirmed over 90% of what the children recalled. Other researchers have found that children can recall other sorts of events as well, including: the birth of a sibling (Sheingold & Tenney, 1982), invasive medical procedures (Goodman et al., 1995; Ornstein, 1995), and the explosion of the space shuttle *Challenger* (Terr et al, 1996). Again the memories are generally accurate but include some errors. As with personal memories recalled by adults, there are occasional large errors.

There is a limit on how long into the past children, and adults, can remember personal experiences. Generally children and adults do not recall experiences that occurred before the age of two or three (Pillemer & White, 1989; Sheingold & Tenney, 1982; Usher & Neisser, 1993; Williams, 1994).

The Effects of Suggestion and Pressure on Memory

Memory is generally accurate unless suggestions are made. When suggestions are made people are likely to incorporate those suggestions into their recollections of experiences. A suggestion is externally provided information that is given to a person after the experience. All people are likely to incorporate suggestions into their memory of an event. Children are more likely than adults to incorporate suggestions into their memories of an experience. In their review of all the studies that have compared the suggestibility of children and adults, Ceci and Bruck (1993) found that children are more suggestible. Most of the suggestions have involved relatively small changes in an event -- such as changing a stop sign to a yield sign in a memory of a car accident.

Recent research has looked at whether people will create entire memories in response to suggestions. Typically in this research, the researchers have asked people about some true events and a false event: one event that is presented as true but that is actually not an event that occurred. In the course of 2 to 3 interviews, between 15 and 25% of college students will create false memories of childhood experiences simply if repeatedly asked about a false experience. This has been demonstrated by several researchers using a variety of events: memory of being lost (Loftus & Pickrell, 1995; Pezdek, 1995), memory of unusual experiences associated with typical religious experiences (Pezdek et al., 1996), memory of overnight hospitalizations (Hyman, et al., 1995; Devitt, Loftus, & Honts, 1996), memories of spilling punch on the parents of a bride at a wedding reception and of evacuating a store because the fire extinguisher system turns on (Hyman et al., 1995). Using more demanding social pressure (requiring the college students to imagine and describe the false event), led to nearly 40% of the students creating a memory of spilling a punch bowl at a wedding reception after 3 interviews (Hyman & Pentland, 1996). Stephen Ceci and his colleagues (Ceci et al., 1994) have investigated how children respond to being repeatedly asked about false events. In their studies they have interviewed children once a week for 10 weeks about true events and a false event (such as getting a finger caught in a mousetrap and having to go to the emergency room). They have found that repeatedly asking the kids if such an event happened, led 30-45% of 3-6 year olds to falsely recall events.

Other researchers have investigated how children respond to leading questions, when those questions concern inappropriate touching. Goodman et al. (1991), in asking young children to recall an invasive medical procedure, asked about inappropriate touching and kissing during one interview. Although most kids correctly answered that such did not occur, a few did incorrectly claim that the touching and kissing did occur. In a similar

study (Bruck, Ceci, Francoeur, & Renick, 1995), in which children were asked leading questions during one interview and then participated in a second interview, more of the children responded to the leading suggestions. In this case the children were asked to remember a routine trip to the doctor's office and were given leading questions concerning a genital examination.

Providing biased information about a person also influences memory of that person's actions has also been studied. Leichtman and Ceci (1995) told children in a preschool class that a person was coming to visit. They told some children that the person was very clumsy and told the children about several accidents that the person had had. When the person came to class, he did nothing. Nonetheless, when later asked suggestive questions about the person's visit, over half of the children claimed that he broke things.

In sum, following suggestions and pressure to remember, memory is less accurate. In response to being asked about a false event, many adults and children will create false memories. When asked leading questions, children will claim that inappropriate touching has occurred. When told that a person has certain characteristics, children will shape their recollections of that person to fit those characteristics. In addition, there is no known way to discern true from false memories (Ceci et al., 1994; Hyman, et al, 1995; Hyman & Pentland, 1996; Leichtman & Ceci, 1995).

Emotional Arousal

Emotional arousal has distinct effects on the encoding of information. When someone is slightly aroused, they generally perform better on many cognitive tasks. As arousal continues to increase people tend to narrow their attention (Easterbrook, 1956). This results in a drop-off in performance on most cognitive tasks. This seems to be particularly true with respect to memory for an arousal event. Most studies show that high levels of arousal leads to a memory that includes less information (Heuer & Reisberg, 1992).

Application to this case

In applying the scientific knowledge to this case, the basic question is whether there has been a pattern of suggestion and leading questions. If Christie has experienced little leading and few suggestions, then her memory is likely to be generally accurate. In contrast, if Christie has been exposed to leading questions and suggestions, then the possibility exists that memory errors have been introduced. In addition, there is one other issue that may also affect memory accuracy: emotional arousal. If Christie was highly aroused she may not remember the experience as completely as she would if she had been less aroused.

After reviewing the materials related to this case, it is my opinion that Christie was exposed to leading questions and suggestions. Christie was repeatedly asked if her mother shot her and her siblings. This occurred during the police interviews and during many of the 6 months of counseling sessions with Dr. Peterson. Repeated questioning about events leads children to falsely remember events. In addition, the suggested change is relatively small. There is no need to create a memory of an entire event: everyone knows that the shooting occurred. The suggestions only concern one aspect of the event: the person who shoot Christie and her siblings.

The repeated questions about the shooting occurred in the midst of discussions concerning Ms. Downs' personal characteristics. The police and Dr. Peterson asked about Ms. Downs and guns and forms of punishment. Christie apparently was told that her mother was a suspect and probably saw that information on the news. Such information could lead to memory errors consistent with the personal characteristic described.

With respect to emotional arousal, we can assume that Christie was highly aroused during the shooting. Thus less information about the event may be remembered. In addition, the shooting occurred at night and Christie was a small child sitting in the back seat of a car. Thus she may have seen little of the event in the first place.

Unfortunately, I know of no way to discern true from false recollections. Christie may be remembering the event as it occurred. She also may have created a memory based on her experiences and in response to the 6 months of repeated questions and suggestions.

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