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FORUM***FREUD'S EGO IN THE COCKPIT***

Kelsie M. O'Bryan

Abstract

In the early 1900's, Sigmund Freud theorized the three parts of a person's personality: the id, the ego, and the superego. The ego controls the id's desires because they may have consequences or not be socially acceptable. A person experiences defense mechanisms to protect his or her ego. Although psychologists view defense mechanisms as a typically healthy way to deal with a problem, the aviation industry sees them as dangers to the safety of flights. Many aircraft accidents have occurred because the pilot had a strong ego, and was unconsciously defending it. Crew members must learn to recognize defense mechanisms in themselves and in their crew. Once recognized, an antidote should be applied. Usually, following prescribed procedures by the Federal Aviation Administration or the airline can help counter the effects of a strong ego. This can make for a safer cockpit.

Psychology**Introduction: The First Psychoanalyst**

Sigmund Freud (1856-1939) was a medical doctor, psychologist, and an influential thinker of the early twentieth century, but he is best known as the founder of psychoanalysis. (Romanian Association for Psychoanalysis Promotion, 1999) According to Time Magazine, the fundamental idea of his new science of the time is that, "all humans are endowed with an unconscious in which potent sexual and aggressive drives, and defenses against them, struggle for supremacy, as it were, behind a person's back." (Gay, 1999) Freud studied stages of development, dream interpretation, and personalities. He also began the practice of 'couch therapy.' Many of his ideas have been deemed as 'unscientific' by modern psychologists, but some of Freud's theories still apply to today's world, especially his theory of personality. (Thornton, 2001)

Psychoanalytic Theory of Personality

According to Sigmund Freud, the personality is a tripartite, or composed of three elements that work together to create complex human behaviors: the id, the ego, and the superego. (Heffner, 1999)

The most primitive element of the personality, the id, is present from birth. The id operates according to the

pleasure principle; its two goals are to seek pleasure and to avoid pain. The id does not rely on reality or logic, but rather demands immediate satisfaction for its basic needs, including those for life (eros) and for aggression/death (thanatos). The id is important to infants because they cannot meet their basic needs themselves. If they are hungry or feeling unsafe, the id makes them cry to have their needs addressed.

Around age three, the second component of personality, the ego, develops. In 1923, Freud called the ego, "that part of the id which has been modified by the direct influence of the external world." Unlike the id, the ego understands that others also have needs and desires, and that actions have consequences. "The ego operates based on the reality principle, which strives to satisfy the id's desires in realistic and socially appropriate ways." (McLeod, 2007) The ego is not a sense of right or wrong. It simply seeks an end that does not harm itself or the id. Usually, the ego can appease the id's impulses through delayed gratification, when the behavior can take place at an acceptable time and place.

A child develops his or her superego by the time he or she is five years old. This part of the personality consists of a person's morals acquired from caregivers and from

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society. The superego controls feelings of right and wrong. Many consider this to be a person's conscience. It works to suppress the id's unacceptable urges, like those for sex and aggression. The superego also tries to force the ego to act on idealistic/moralistic standards, rather than just realistic ones. (Cherry, *The Id, Ego, and Superego: The Structural Model of Personality*, 2005)

Sigmund Freud preached that the key to a healthy personality is to maintain a balance between the id, the ego, and the superego. The ego is constantly seeking this healthy balance. It must be the strongest element so, "it can satisfy the needs of the id, not upset the superego, and still take into consideration the reality of every situation." (Heffner, 1999) Freud termed the ego's ability to function despite these contradicting forces 'ego strength.' "A person with good ego strength is able to effectively manage these pressures, while those with too much or too little ego strength can become too unyielding or too disrupting." (Heffner, 1999) This research paper will focus largely on the ego.

Protecting the Ego

When the ego cannot handle the id's demands, the constraints of reality, and the superego's moral standards, the person experiences anxiety. According to Freud, "anxiety is an unpleasant inner state that people seek to avoid." Anxiety is the first sign that something is wrong, and the person will then exhibit defense mechanisms to protect his or her ego. This is typically done unconsciously, but it may also happen knowingly. Although it is a distortion of reality, defense mechanisms can simply be a way to adapt to a situation in order for a person can function normally. At the same time, they can become unhealthy when overused to avoid confronting problems. Many exist today, but Sigmund Freud, and later his daughter Anna, identified the basic nine defense mechanisms: repression, denial, rationalization, projection, reaction formation, intellectualization, regression, displacement, and sublimation. (Clark, 2004)

First, repression is also known as 'motivated forgetting.' It acts to keep certain memories out of conscious awareness, but they continue to influence a person's behavior. This may have occurred if a person has a phobia, but doesn't know where it originated from. Denial is repression taken to an extreme level. "Denial is an outright refusal to admit or recognize that something has occurred or is currently occurring." It acts to protect the ego from situations it cannot deal with, for example, a doctor's diagnosis of a terminal illness. (Heffner, 1999)

Next, rationalization is the defense mechanism that

involves making excuses to defend behavior, simultaneously avoiding the true reasons for it. This protects the ego's self-esteem by blaming fault on someone or something else, like when a speeder blames his or her speeding ticket on the police officer, a lack of signs, or the speedometer. Similarly, projection is placing your own unacceptable qualities, feelings, or impulses onto someone else. This will allow a person to express and criticize the impulse, but without the ego recognizing it. The threat is eliminated, and self-esteem is maintained.

Reaction formation is taking the opposite belief, impulse, or behavior because the true belief causes anxiety. A modern example of making a reaction formation is when a secretly gay man engages in many heterosexual affairs to disguise his homosexuality. The person goes overboard in the other direction.

Next, intellectualization occurs when a person avoids seeming unacceptable emotions by focusing on the intellectual aspects of the situation. Like all defense mechanisms, intellectualization can have positive consequences. If a rape victim were to experience intellectualization, she would educate herself on information and statistics of rape, take self-defense classes, and possibly even teach these things to other women and men. Even though she is making her traumatic experience into a positive outcome, it is unhealthy to repress the emotional side of the event. Eventually, those feelings will have to be addressed.

Regression is when a person moves back in development to a time when he or she felt safe and secure, often childhood. It may be as inconspicuous as a student taking his or her old stuffed animal to college, or as extreme as an adult throwing a temper tantrum in public.

Finally, displacement involves taking out frustrations, feelings, or impulses on people or objects that are less threatening. The less threatening option is referred to as the scapegoat. This happens every day. An example of displacement is when a man has a stressful day at work. Instead of arguing with his boss and potentially getting fired, he goes home and yells at his wife or throws an inanimate object to relieve his anger. In contrast, sublimation is when a person acts out his or her impulses in a socially acceptable form. A person with a great need for order may become a scientist; or a person with excess anger could choose to be a professional football player. People who succumb to sublimation are often admired for finding their 'true calling.' Freud viewed this defense mechanism as a sign of maturity, allowing people to protect their egos while functioning normally in a very socially acceptable,

even productive, way. (Cherry, Defense Mechanisms, 2006)

Aviation

How Ego Affects the Cockpit

Like every other profession, pilots are affected by their ego and their need to protect it. The Federal Aviation Administration's (FAA) *Aviation Instructor's Handbook* cautions about the dangers of defense mechanisms in the cockpit. Ultimately, defense mechanisms are a distortion of reality. "Thus, they alleviate the symptoms, not the causes, and do not solve problems." (Federal Aviation Administration, 2009) The Handbook goes on to say that defense mechanisms are unconscious, and therefore, "not subject to normal conscious checks and balances." In addition, it says that once the person is aware that he or she is exhibiting a defense mechanism, his or her behavior becomes, "an ineffective way of satisfying a need." Different from Freud's view, the FAA sees ego and defense mechanisms as a threat to safety.

According to *Commercial Aviation Safety*, "Interactions [among crew members] are influenced by two important variables, namely, peer pressure and ego." (Wells & Rodrigues, 2001) Referring to Freud's definition of ego, peer pressure is very similar. A young or inexperienced pilot's id feels the need to prove itself to the superior captain. It is the ego's responsibility to do this at an appropriate place and time. Defense mechanisms will protect the pilot's self-esteem, but also, potentially alter the safety of the flight. The book says the pilot may make the wrong decision because, "the safe course of action may be perceived as involving an unacceptable loss of face." *Commercial Aviation Safety* recognizes that a moderate amount of ego has a positive effect on motivation and performance. Obviously, a pilot must be confident in his or her abilities to safely execute flights. Ego is necessary in the cockpit, but at the same time, "a strong ego...may produce good leadership qualities in emergency situations, but it may also result in poor crew or resource management." The domineering personality that comes with a strong ego may discourage input from others or, "may disregard established procedures, previous training, or good airmanship." The FAA's *Advisory Circular 60-22* identifies this strong ego characteristic as one of the five hazardous attitudes, macho. This kind of pilot's motto is 'I can do it.' "Pilots with this type of attitude will try to prove themselves by taking risks in order to impress others (14)," usually, ignoring safety. According to the Advisory Circular, hazardous attitudes like this one must be recognized, and then its antidote must be applied. In this case, the pilot should counter his strong ego with the phrase, 'taking chances is foolish.' (Federal

Aviation Administration, 1991)

In a professional crew setting, the most dangerous aspect of ego may be how it affects communications. According to a human factors study, "being strong, being right, maintaining his status and reputation [are all] critical to the pilot's self-image." (Freud's Personality Factors, 2002) A captain's ego can prevent him or her from discussing the best course of action with the crew or from admitting mistakes because it could show a flaw in his or her abilities. (Captains' egos are likely to be especially strong if they have experience as a military fighter pilot because they were initially trained to be self-reliant.) At the same time, a first officer's ego can keep him or her from pointing out possible errors that cause accidents for fear of being disrespectful or embarrassed. A cockpit full of ego and without constructive communication can be a recipe for disaster.

Just like instructors have to be on the lookout for defense mechanisms in their students, crew members should monitor one another. These are usually brought on by a personal crisis or another stressful event in the crewmember's life. For example, he or she may be going through a divorce or be financially stressed. The cause could be almost anything. The *Aviation Instructor's Handbook* identifies some symptoms of defense mechanisms: "a change in personality, angry outbursts, depression, [...] social withdrawal, preoccupation with certain ideas, or an inability to concentrate." If another crewmember witnesses defense mechanisms, he or she is advised to try to discuss the issue with the affected crewmember. "The main objective should be to restore motivation and self-confidence." (Federal Aviation Administration, 2009) People's egos are fragile, and must be approached in delicate ways, although, if necessary, a professional counselor should be recommended. Although the NTSB has never cited the cause of an aircraft accident to be due to the 'pilot's ego,' certain phrases signal that that may have been the case: "pilot failed to overshoot", "descended below minima", "failed to divert to an alternate", "attempted operation beyond experience/ability level", "continued flight into known adverse weather", etc. (Wells & Rodrigues, 2001)

Examples of Interfering Egos

Proof that pilot's strong egos can compromise the safety of a flight can be found in many National Transportation Safety Board (NTSB) reports. It is especially evident in the following four accidents: the Avjet Aspen Crash in 2001, the Tenerife Airport Disaster, Garuda Indonesia Flight 200, and Pinnacle Airlines Flight 3701.

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On March 29, 2001, a Gulfstream III operated by Avjet Corporation was on a chartered flight from the Los Angeles International Airport (KLAX) to the Aspen-Pitkin County Airport in Aspen, Colorado (KASE). The flight initially left KLAX forty-one minutes late due to the tardiness of the chartering passengers. A Notice to Airmen (NOTAM) was issued to the first officer during his preflight briefing stating that the instrument approach procedure was not authorized at night, although the crew continued the approach after the end of civil twilight, estimated as thirty minutes after sunset by the crew. On the approach, the crew reported the runway in sight to the air traffic controller working the airplane, but their flight path indicates they never saw it. The NTSB determined the cause of the accident to be, "the flight crew's operation of the airplane below the minimum decent altitude (MDA) without an appropriate visual reference for the runway." Even though all of their information indicated they should go missed, the crew continued the approach. This led to the death of fifteen people.

On the Avjet flight, the pilots obviously had the 'I can do it' attitude that comes with a strong ego. Combined with pressure from the paying customers, the captain and first officer chose to ignore the curfew at KASE, lie to the controller about seeing the runway, and descend below MDA into an area of terrain without being able to see it. They had only flown into this particular airport twice, and only during daylight conditions. Some believe the crew was experiencing the defense mechanism rationalization. If they were, the pilots wanted it to seem like executing the approach illegally was due to pressure from the paying customers (this did have some affect on the situation). In reality, the pilots' bad decision-making was probably because of their macho attitudes. They wanted to prove they could do it. This overconfidence caused by their strong egos had dire consequences for everyone on board. (2001 Avjet Aspen Crash, 2003)

On March 27, 1977, along with many other airplanes, Pan Am Flight 1736 and KLM Flight 4805, both Boeing 747s, were diverted to Tenerife's Los Rodeos Airport in the Canary Islands after their airport of intended landing, the Las Palmas Airport, incurred a small-scale terrorist attack. Later that day, Las Palmas Airport reopened to traffic. Because of the unusual congestion, aircraft at Tenerife had been parked on taxiways, blocking them from use. For this reason, the controller on duty was back-taxiing aircraft down the runway to get in position for departure. At this time, he instructed KLM 4805 to taxi to the end of the runway, make a one-hundred and eighty degree turn, and

hold for takeoff. He also taxied Pan Am 1736 down the runway, but that aircraft was instructed to exit the runway on a taxiway to their left. By this time, a thick fog had rolled in, preventing the tower controller from seeing the airplanes, and the airplanes from seeing each other. When KLM 4805 was positioned for takeoff on the runway, the captain proceeded to release the brakes and set full power. His first officer stopped him, saying, "Wait, we don't have clearance!" (Kilroy, 1997) The captain was experiencing the macho hazardous attitude, and possibly also anti-authority and impulsivity. The first officer then received departure, but not takeoff clearance, and replied, "We're now at takeoff," as the captain advanced the throttles. The controller then told them to standby for takeoff, but the transmission was 'stepped on' by the Pan Am reporting still on the runway. Sadly, five-hundred eighty-three people perished from the decision of the KLM 4805 captain to takeoff without clearance. (Aviation Sri Lanka, 2008)

The KLM 4805 captain's strong ego and want to get off the ground after a long unexpected delay affected his ability to problem solve. He ignored procedure and made his own decision. The first officer tried to stop him, but after being assertive once and unsure of himself due to little experience in the Boeing 747, he did not have the courage in him to do it again. Some believe the captain was experiencing reaction formation. He knew he did not have takeoff clearance, but he wanted to believe he did because the lack of clearance made his flight later, causing him more stress. He chose the belief and behavior opposite to the truth to appease his ego. Pilots of both aircraft saw the accident coming just seconds before it happened. KLM 4805 attempted to get airborne early, tail striking the runway, and Pan Am 1736 tried to taxi off the runway, into the grass, but their efforts were too late.

Garuda Indonesia Flight 200, was an Indonesian domestic flight, traveling from Bandara Soekarno Hatta International Airport to Yogyakarta Adi Sucipto Airport on March 07, 2007. Ten miles from the Yogyakarta Adi Sucipto Airport, the crew was given clearance for a visual approach to runway 09. Ignoring authority, the captain continued the instrument approach. The recommended top of descent at this point was 2,500 feet, but the Boeing 737 was almost at an altitude of 4,000 feet. The captain chose to descend rapidly to achieve glide slope, and the airspeed increased tremendously. In his approach, the Ground Proximity Warning System sounded fifteen times, and the first officer repeatedly called for go-around. The captain's strong ego told him that he could complete the approach and land the airplane. Against all common sense, but apparent

by his actions, he must have been thinking 'I can do it.' The aircraft eventually touched down eighty-seven knots faster than landing speed, and the first officer requested a go-around yet again. The captain was determined to be successful; he never intended to compromise the safety of the flight. In a post-crash interview, he said, "At the (time of the crash) I used all of my might to save the flight mission." (Garuda Indonesia Flight 200 & Captain John Bartels, 2008) Ultimately, the aircraft overran the runway, killing twenty-two people.

On Garuda Indonesia Flight 200, it has been speculated that the captain was motivated to get on the ground by a new Garuda Airlines company policy. Since fuel costs the company money, it gave pilots who saved it a conservation bonus in their paycheck. (Garuda Indonesia Flight 200, 2007) The captain may have been experiencing rationalization. In his head, he could probably justify sacrificing the safety of the flight for extra money in his pocket, as long as the outcome was positive. Unfortunately, he let his bad decisions go to such an extreme level, continually refusing to do a go-around, that they were unrecoverable. The captain was obviously at fault, but the first officer was not free of blame. Garuda Indonesia had a company policy that allowed the first officer to take control of the aircraft when the captain ignored his recommendation to go around. Although the first officer did suggest the proper correction, he did not take charge and fix the situation. Just like the captain, the first officer's ego probably affected his ability to problem solve as well. He did not want to be assertive by taking the controls, and then be wrong. That would be detrimental to a second-in-command's self-image. But, if he had stepped up, a second approach could have been successful. (Garuda Indonesia Flight 200, 2009)

Finally, a blatant disregard for rules and procedures can be the most obvious identifier of a strong ego and can turn into the most dangerous of situations, especially when the ego prevents the person from admitting his or her mistakes. On October 14, 2004, Pinnacle Airlines Flight 3701, a Bombardier CL-600-2B19 (CRJ 200), was operating to reposition the aircraft from Little Rock, Arkansas (KLIT) to Minneapolis-St. Paul International Airport (KMSA) for a scheduled passenger flight the next morning. At the time of the accident, thankfully, only two crewmembers were aboard the aircraft. This lack of feeling responsible for the normal fifty lives on board gave the crew the freedom to attempt risky maneuvers and push the airplane and themselves past their limits. On the way up to their original requested altitude of 33,000 feet, the crew made three erratic

nose-up pitch inputs and several rudder inputs to experience G's. The stick shaker protection kept trying to stop this, but they continued to override it. The crew requested an altitude of 41,000 feet, which was the CRJ 200's service ceiling in perfect conditions. On that flight, based on the atmospheric conditions and aircraft's weight, their maximum altitude for the 500 feet per minute climb they set the autopilot to was 38,700 feet. (What Went Wrong: The Crash of Flight 3701, 2006) The crew was attempting to 'join the 4-1-0 club.' This is an unofficial group of pilots who are proud to have reached the limit of 41,000 in a CRJ 200. The pilots achieved club status, but they would not make it back on the ground alive to tell the story.

Upon reaching their new requested altitude, the controller queried Pinnacle 3701 about their aircraft type because she was not accustomed to seeing CRJ 200's at an altitude of 41,000 feet. The captain told her, "We don't have any passengers on board so we decided to have a little fun and come on up here...this is actually our service ceiling." (National Transportation Safety Board, 2007) From the captain's bragging, it is obvious that the crew is proud of their macho attitude. Just seconds after showing off, they realized that the airplane could not maintain its service ceiling. Its airspeed was becoming dangerously slow; the pitch was abnormally high; and the engines could no longer function after being pushed to 600 degrees above their maximum operating temperature and without sufficient oxygen to fuel them. After five activations of the stickshaker, the CRJ 200 aerodynamically stalled, rolled into its left wing, and flamed out both engines.

To protect their egos, the pilots of Pinnacle 3701 immediately began experiencing denial. If they would have admitted the double engine failure to the air traffic controller right away, they could have glided to six different airports and landed successfully. They didn't want to believe that they had made a mistake, so they chose to hide that information and instead, incorrectly executed the checklists for engine restart. Regardless of their actions, the right engine probably could have never restarted. Because it was operating beyond its limits at 300 degrees Celsius above its recommended temperature, "the ends of the high pressure turbine blades had liquefied, resolidifying on the low pressure blades behind them." (What Went Wrong: The Crash of Flight 3701, 2006) By the time they admitted their failure to the controller, it was too late. Pinnacle Flight 3701 crashed two and a half miles short of the runway at Jefferson City Airport, killing both crew members on board. (National Transportation Safety Board, 2007) The pilots let their egos get in the way of their training and good decision-making

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skills. They made the initial mistake of pushing the aircraft past its limits, but then failed to correct it by simply admitting their error to someone who could help, the controller. As in many similar situations, sadly, the pilots' strong egos cost them the ultimate price—their lives.

Antidotes to Strong Egos

Strong egos can be corrected by following prescribed procedures and rules. The FAA publishes regulations, and airliners have standard operating procedures to be followed to try to ensure safety in flight. According to Darren Smith, an experienced instructor, ego affects a pilot's flying discipline, including his or her decision-making skills. Among others, Mr. Smith suggests recurrent training and practicing good habits to maintain a safe flying discipline. Hopefully, in an emergency situation, the familiar feeling of following procedures will trigger the proper strategy to fix the problem. (Smith, 2005) A pilot's

true capabilities can shine in an emergency to do everything he or she can to solve the problem, or his or her strong ego can come out to prevent good decision-making.

Conclusion

In the early 1900's, when Freud theorized the psychoanalytic theory of personalities, he could have never imagined it would apply to people flying an airplane, but it does. The ego and the defense mechanisms a person exhibits to protect it can affect the person's decision-making ability, no matter what he or she is doing. As seen in the previous airplane accidents, when a person lets his or her ego override rational thinking, it can have dire consequences: lives. For this reason, crews must be trained to recognize unwanted behavior due to egos in them self and in crew members. Identifying the problem is the first step in fixing it, and then an antidote may be implemented. →

Kelsie O'Bryan received her bachelor of science degree in Aeronautics from Embry-Riddle Aeronautical University Daytona Beach Campus. While at college, she earned her private pilot's license and instrument rating and discovered her passion for air traffic controlling. She was president of the University's Women in Aviation International Chapter, attending multiple WAI Conferences, and even conducting a meeting at the most recent Conference in Reno, Nevada. Kelsie is currently working as a teacher's assistant at Embry-Riddle while pursuing her master's degree in Aeronautics. She plans to work for the Federal Aviation Administration as an air traffic controller, and eventually, to return to Embry-Riddle as a full-time professor.

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