Understanding Frustration II

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In the last article, we explored the nature of frustration. In this article, we examine the typical responses to frustration and some research that has been done which relates to frustration. The amount of research far exceeds what can be covered here, but we wanted to share some of the most relevant research as it may relate to repetitive strain injuries.

Responses to Frustration
Frustration is the most common precursor to and possibly elicitor of anger[3]. It is also associated with aggression and with stress.

Escape, withdrawal and apathy can also be responses to frustration.

As mentioned in the previous article, the level of emotional reaction depends to some degree on the ability to manage emotions. Failure to manage emotions can include decreased productivity, inability to pay attention and to learn, injury to cooperative relationships, increased personal stress and depression, addiction, and other health problems. [1, 2]

Aggression in response to frustration can be in the form of ***direct aggression*** expressed toward the object or person perceived as the source of frustration. A machine might be kicked or a person might be verbally threatened or pushed. Even verbally assaulting a person under your breath is direct aggression in cases where overt aggression may seem too threatening. [4]

Displaced aggression is often used when the source of the frustration is too powerful or threatening for direct aggression. If someone is frustrated by their boss, they may take it out on someone whom they do not feel threatened by, such as a co-worker, spouse, child, or friend. Displaced aggression can result in a whole chain of aggression. The person who has taken the brunt of displaced aggression may in turn release their frustrations to people down the pecking order.

Responses to frustration do not have to be destructive or negative. They can be constructive. One of these responses is persistence; continued trying and increased effort. Trying alternate or different approaches to reach the same goal, is another possible positive response to frustration, that is "going around" the obstacle. Consulting with others who are experienced in reaching the desired goal is another constructive response to frustration. And finally, having alternate goals is a constructive response, so that if reaching one goal fails, there is another goal to shoot for. This generally involves advance planning which may not always be an option. [4]

Research
Work Style and Frustration.
Work style is defined as how work is performed. It is the manner or intensity in which a given individual meets the demands of a task. Research shows that stress coupled with individual characteristics, leads to symptoms of ill health and disease. It appears that work style is a differentiating factor in those who experience symptoms and those who do not.[5] In other words, for people experiencing equal levels of stress, those who have an intense work style are more apt to experience poor health than those who have a less intense work style. It is for this reason that we in the SRI Ergonomic Program, became interested in the association of frustration with the potential of individuals to experience repetitive strain injuries. If frustration causes anger, aggression and stress, it is logical to assume that this, in turn, would lead to a predisposition to injuries since these things have a direct effect upon a person's work style.

User-interaction research attempting to test different algorithms for studying user interfaces, used mouse pressure as a measure of frustration in subjects in at least two studies. Eight pressure sensors were placed on an ordinary mouse. Subjects were subjected to an extremely frustrating computer interaction. The researchers measured and compared mouse pressure before and after the frustrating event. It was determined that mouse pressure was a very reliable measure of frustration, so it was used in both studies to test the user interface algorithms.[6,7]

What this means to ergonomists is that people are gripping the mouse more tightly when they are frustrated. Gripping the mouse tightly is a very damaging action for the hand. It decreases circulation and stresses the tendons, nerves, and muscles in the hand. Over time, this is likely to lead to repetitive strain injuries. Force and gripping lead to strain injuries. If frustration leads to force and gripping, it follows that you are more likely to injure yourself when you are frustrated. It indicates that work style, when a person is frustrated, is sometimes exhibited as force and gripping, which does directly affect the health of the individual.

Person-machine and Social Interaction During Frustration.
It has been shown that people naturally tend to relate to machines as if they were other people.[9] People interact with media, especially computers, with the same expectations and social rules as in dealing with other people. A controlled study was conducted to investigate human-computer interactions.[1] Various social, emotional feedback strategies were presented by a computer to relieve users' frustration. A computer interaction system was devised that successfully elicited frustration. In one group, people were not given an opportunity to express their feelings about the frustrating computer interaction at all. A second group was given the opportunity to vent their feelings to the computer. And a third group was given an opportunity to start venting, but then the computer would start interacting by providing feedback to their emotions based on theories of active listening. It was found that the group who received feedback from the computer experienced significantly less frustration than the other two groups and, additionally, they were found to perform better. Interestingly, too, there was no significant difference between males and females in this regard, even though it was expected that females would respond more to the social interaction.

Positive social interaction with a computer can alleviate frustration and humans may benefit emotionally from computers that respond in socially appropriate ways. It is also interesting to note that self-reports of frustration obtained during this study were so unreliable as to be useless,

compared to the behavioral measures (how long they voluntarily played a frustrating game a second time). Self-reported level of anger was extremely low despite routine reports of high frustration levels. The researcher proposed that this might possibly due to the social desirability factor that anger and loss of control are a sign of weakness.

The results of this study are important to us in several ways. It indicates ways to improve harmony in interactions between cooperative parties, whether human or machine. One's ability to think creatively and generate solutions to one's own problems may be increased when this interaction model is used. And it is likely that it would decrease the chances that subsequent annoying situations would be seen as frustrating over time, possibly improving one's sense of autonomy and self-control.

Locus of Control and Frustration.

The concept of Locus of Control is also relevant to this discussion. Locus of control refers to an individual's belief about what causes certain outcomes. Those with an *internal locus of control* feel that they have considerable control over the outcomes in their lives. Success and failure is a function of one's ability and effort. Those with an *external locus of control* feel that outside forces, such as luck or fate, exert considerable control over the outcomes in their lives. "Internals" tend to perform better on academic tasks that externals. They also have more effective coping strategies, which leads to better psychological adjustment and reduces the negative health affects associated with high stress.[9] A similar scale was developed, called Health Locus of Control.[10] This is a measure of people's beliefs that their health is or is not determined by their own behavior and it was developed because medical professionals were continuously stressing the importance of the patient's active role in his or her own health care. People who believe that their health is a matter of fate, not within their own control, or that they can only do what their doctor tells them to do have an external health locus of control. Medical staff were, in effect, trying to get patients to adopt an internal locus of control without knowledge that this theory even existed.

Locus of Control is relevant to the discussion of frustration because, as mentioned in the first article, frustration is often related to the amount of control that someone feels they have in the situation. If there is little sense of control, the person usually feels powerless to change the situation. This is also a common source of stress. For this reason, it is likely that people who rate highly on the external locus of control, or health locus of control scale, will tend to feel more frustrated and potentially more anxious or angry, than those who are have an internal locus of control. In addition, internals are less likely to take responsibility for their own health, and thereby less likely to try to take precautions to avoid Repetitive Strain Injuries, to treat the early warning signs, or to use self-care when experiencing symptoms of RSI. These are people who will continuously seek help from medical authorities, try lots of different types of "ergonomic" equipment, but still cease to realize that the primary source of their pain is through their own actions and overworking the same muscles, nerves and tendons every day.

In the next article, we will discuss potential ways to deal with frustration.

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