Anchoring and Classical Conditioning, Acuity, 2(2) (November 2011).

Abstract: The following article examines the basic concept of anchoring, rooting the practice in insights from mainline psychology. Anchoring, as most frequently encountered, is the NLP term for creating a Pavlovian or conditioned response. The stimulus can be established by a touch, a word, a gesture, a motion, even a picture; anything that is consistently repeatable. There are content-free anchors and anchors that carry contextual information. It is important to differentiate between them. Content-free anchors are created by focusing on the abstract elements of the experience until the memory, content and context fade away. Anchors that carry contextual information have more limited application. Anchors can be practiced in multiple situations or future paced to insure that they transfer to new contexts. Anchors may be observed in the chaining of ideas and responses as one idea repeatedly evokes another.

One of the most important facets of human behavior is the phenomenon of conditioning. Despite the varieties of psychological theories that explain who we are and how we become that way, one of the more basic ways that we interact with the world is through conditioning.

Psychologists will tell you that there are three kinds of conditioning: classical or Pavlovian conditioning, operant or instrumental conditioning and observational conditioning or modeling. Classical conditioning typically affects non-voluntary systems like the endocrine system and smooth muscle responses. Operant conditioning affects voluntary, typically goal

oriented behaviors. Observational conditioning works primarily on socially determined behavior through the mechanisms of imitation. All of them can operate either within or outside of conscious awareness. In NLP, Pavlovian conditioning tends to be the most commonly used form of anchoring.

Pavlovian or classical conditioning was discovered by the Russian physiologist, Ivan Pavlov in the early years of the 20th Century. Pavlov was studying the digestive system of dogs with special emphasis on the salivary response. In his laboratory, Pavlov had dogs in harnesses. Each dog had had two cannulae, or tubes, surgically implanted in its mouth. On one side of the dog's cheek, a compressed air mechanism squirted meat powder into the dog's mouth. From the other, a tube drained saliva into a container so that Pavlov and his assistants could measure its volume. Whenever the compressed air mechanism shot a bolus of meat powder into the dog's mouth, the mechanism would emit a click and the click would be followed in less than a second by the meat powder.

One day, the mechanism ran out of meat powder. To Pavlov's surprise, the dogs continued to salivate at the click almost as much as if the meat powder was present. He came to think that the sound of the mechanism, the click, had somehow become associated with the action of the meat powder. To test this, he arranged an electric buzzer or bell to sound just before the meat powder. As he expected, after several pairings, the bell came to elicit the same kind of response that the click had; the dogs salivated.

Pavlov noted that there was a general principle that a neutral stimulus (one without a specific meaning in that context—the bell) can be paired with an unconditioned stimulus (a stimulus which by its nature produces a response without learning—the meat powder), so that after several repetitions a connection is made and the previously neutral stimulus now evokes the

same response (shares the same meaning) as the unconditioned stimulus. Beyond this, however, Pavlovian conditioning is now understood in terms of how much information the conditioned stimulus provides about the presence, absence or quality of the unconditioned stimulus. Despite the pairing, if the conditioned stimulus provides no predictive advantage, the association will not be learned (Bouton, 1994; Bouton & Moody, 2004; Pavlov, 1927; Rescorla, 1988).

Pavlov and later behavioral scientists discovered that a wide range of responses were subject to this kind of conditioning; glandular responses (tears, salivation, stomach acid), emotions (joy, fear, sadness, surprise), involuntary muscular responses (heartbeat, pulse). We encounter the same kinds of responses in our everyday life. A couple turns on the radio and they recognize the tune as 'their song.' They are immediately swept away in reminiscence of the time when that song made its impact. You are driving down the road and you approach the point where you were recently pulled over for speeding. As you approach the point, your anxiety increases and you begin to slow down. You enter a room and smell a familiar fragrance. Suddenly, you find yourself thinking about an old girlfriend or a boyfriend who wore that scent (Bouton, 1994; Bouton & Moody, 2004; Pavlov, 1927; Rescorla, 1988).

TV commercials, jingles and stock images all seek to make use of the possibility that stimulus events, what we see hear, feel, smell and taste, will evoke just the right emotional state for them to sell their wares. Politicians evoke images of attacks, war and carnage to instill fear. They also adduce images of bravery, patriotism and honor to awaken those feelings in their audiences and so the audience will associate that feeling with them.

Smells are often the most powerful anchors. Unlike the other senses, smell is transmitted with little or no processing to associative areas and directly evokes memory and emotion (Lundstrom & Olsson, 2010).

In NLP, these neural connections are referred to as anchors. An anchor is the stimulus that evokes the memory of a past experience and makes it available to conscious experience. Anchors can range from immediate, one-shot learnings evoked by a single word or touch (like phobias), to classically conditioned, stimulus response connections that are built up over several trials. The word itself may also refer to the response as, an 'anchored response'. In NLP when we use an anchor, we say that we fire it off (Bandler & Grinder, 1979; Linden & Perutz, 2004).

When one-trial conditioning or anchoring occurs, it usually occurs in regard of a powerfully emotional stimulus, an extraordinarily novel experience or something that is life threatening. Examples here are phobias, PTSD and flashbulb memories—the vivid recollections of a traumatic or extremely novel experience. In other cases, it may occur when a new experience matches a preexisting set of beliefs or behaviors so that it becomes a natural part of a pre-existing schema or pattern (Bouton, 1994; Bouton & Moody, 2004; Diamond et al., 2007; Morris, 2004). Moreover, one-shot learnings may depend upon the distinctive nature of the conditioned stimulus (Bouton & Moody, 2004; Domjian, 2010; Rescorla, 1988).

It is important to note that although NLP has often promoted anchoring as a one-shot learning of two associated stimuli, like a touch or a word combined with an emotion or mood; for therapeutic purposes, this is not always a reliable means of establishing the anchor. In most cases, the anchor stimulus must be paired multiple times (five to seven) with the desired response until that response arises reliably and automatically. Done this way, anchoring is a dependable and automatic expression of Pavlovian delayed conditioning (Dilts & Delozier 2000; Gray, 2008, 2008a; Grinder and Bandler, 1979; Klein, 2008; Linden & Perutz, 1998; O'Connor & Seymour, 1999; Pavlov, 1927; Rescorla, 1988).

Delayed conditioning specifies a paradigm where the conditioned stimulus (originally neutral) is presented after the onset of the unconditioned stimulus and terminates while the unconditioned response is still present. For example, your client begins to talk about a pleasant experience and you observe a change in their physiology that reflects their enjoyment (the unconditioned response). While that state is still increasing, you repeatedly anchor the experience by tapping your finger on the table (the conditioned stimulus). This is delayed conditioning (Klein, 2008).

Conditioning, while long thought to be a simple result of the association of two stimuli within a specific time frame, is now known to be dependent on the amount of information that the conditioned stimulus provides, and on the state of the organism during the anchoring process. Hungry organisms learn conditioned responses to food in fewer trials than satiated organisms. Anxious organisms are more easily trained to create a fear-based association than a pleasure-based association. Persons in a bad mood are less likely to create a joyful or resourceful anchor than someone in a positive or neutral state. What might evoke a positively sexual response in one context might evoke sleaze in another. At least one perspective holds that the most efficient conditioning exercises are those in which the conditioned stimulus is not neutral but already bears some relationship to the desired response. Anchors must be created in appropriate contexts. That is, no matter where the anchor is to be used, its creation is most effectively done in a physiological or affective context that matches its intended purpose (Domjian, 2005; Rescorla, 1988)

Conversational Anchoring

As you may have guessed from the examples already given, anchors can be very powerful. In general, they represent one of the major ways in which we, as humans, connect

meaning to otherwise meaningless stimuli. Otherwise neutral events gain meaning by repeated association with our internal feelings and other stimuli that are present in the world around us.

In NLP, anchors can be used to change a person's state or frame of mind. In a therapeutic context, a client might come into a session feeling stressed. The counselor, noting the stress, turns the conversation to the recollection of a positive experience. As he does this, the counselor might notice that the client is showing signs of a more relaxed and positive physiology. Their motions may become more fluid, their face may relax, the locus and rate of their breathing might change and the veins in their neck might no longer bulge and pulse. At this point, the counselor might touch that person, in a way that he can repeat, or say a word with a specific tonality, or even move something on the table to a different position (it would have to move back when the conversation changed). All of these can be used as conditioned stimuli.

After a short time, the conversation might return to a more neutral or negative focus. Once more, the counselor can guide the conversation to a more positive topic and watch for the same indicators to appear. When they did, she could again touch the person in the same place, with the same pressure; say that word, with the same tonality and volume; make that special gesture; or move the object on the table to the same place she moved it before. After several repetitions of this cycle, the counselor might notice that now, touching the touch, saying the word, making the gesture or moving the object intensifies the positive response. There is more relaxation, deeper color change and more evidence of a state change immediately following the firing of the anchor. This means that the essential conditioning has been completed. To test the anchor, the counselor would wait for a lull in the conversation, fire off the anchor and see what happens. Once again, you should see the client's physiology shift in a positive direction. Make

sure that you can see and hear the evidence. Once the anchor has been established and tested, it can be used to steer the conversation and its emotional tone.

There are subtleties to the technique. An important part of it is watching the subject to make sure that you can see the changes in posture, breathing, muscular tension, facial expression, and other physiological signs that their state has shifted. Further, you need to make sure that as you move into the topic area that makes them feel good, you ask enough detailed questions so that they access the desired state.

Gray (personal communication, 2011) reports the following example:

When I was first learning NLP, I was working as a Federal Probation Officer. I had just moved from regular probation work to a computer assignment. I was assigned a partner to help me, but my partner was so overwhelmed with his regular tasks—writing pre-sentence investigations—that he had no time to help me. Bob—that's what I'll call him—was stressed to the max. He was behind in his work but was forced to take a vacation so as not to lose the days he'd earned. He took a long weekend and went out to Maine where he camped and fished and had a completely relaxing time.

When he returned to work a group of officers gathered in his office to hear him tell the story of his vacation. As he told it, I noticed that his shoulders relaxed, his voice tone lowered, his breath slowed, his facial symmetry became more even and he sighed audibly. After a few moments of that, he would begin to talk about his cases and his back would stiffen, his lips would thin out, he would lose facial color, his shoulders would pull inward, his breathing would speed up and he would look worse. I decided to use my new anchoring skill.

Noting that he had grown tense again, I stopped his discussion of how far behind he was and asked him about whether he had seen any sunsets in the country. He said yes and I began to ask him about the colors and sounds and smells. As he described these, I could see his physiology changing back to the resourceful state. As I noticed that, I made a sweeping arm gesture over my head and said, "Wow!" That was pretty outrageous, but no one seemed to notice. The conversation drifted back towards the burden of work and everything that he had to do, so I broke in again. "You know," I said, "that trip must have been wonderful. Can you tell me more about being out in the lake in the canoe; what it felt like and how it smelled? Did you see any interesting animals?"

Once again his physiology began to change as his mind returned to the trip. When the changes were clear in his face, posture, breathing and voice tonality, I again made the seeping gesture and said, "Wow!" After several repetitions I noticed that whenever I made the gesture, his response seemed to get stronger. That is, all of the physiological signs increased and he seemed to become more intensely involved with his tale. This told me that the anchor, the conditioned association, had been established.

To further test the anchor, I went into his office the next day and started a conversation about work. In the middle of a sentence in which he was stressing about his caseload, I waived my hand in an arc over my head and said "Wow." He stopped dead in the middle of the sentence and began to visibly relax. After the process went on for a few more seconds, he shook it off.

Obviously, anchors, especially covert anchors, should not be outrageous or obvious, but this example illustrates the power of the technique. It also marks out a significant parameter for

anchoring and conditioning: the more distinctive and pronounced the conditioned stimulus, the fewer conditioning trials the process will require (Domjian, 2010).

Here are the basic steps for creating an anchor.

1. Choose a response that you want to anchor.

2. Choose a neutral stimulus that you will associate to that response (for most circumstances choose one that has no existing meanings that you are aware of). This might be a gesture, a word, a touch or moving something. It could be a specific scribble on a piece of paper. Make sure that it is repeatable.

3. Guide the conversation so that the positive response that you have chosen arises.

4. Calibrate, watch for changes in the person's face, posture, color, speech tonality, pace and breathing that tell you that their state has changed.

5. As you observe those changes intensifying, make the gesture, movement, sound or touch in a way that is repeatable.

6. Allow the conversation to drift to another topic and the speaker's physiology to change from the target state.

7. Repeat steps 3-6 until you discover that making the gesture, movement, sound or touch enhances the state as evidenced by your observations of the speaker's physiology.

8. Test the anchor by using it during a lull in the conversation or when it has turned to a neutral topic. You will know if you have succeeded if any or all of the following happen:

   a. The conversation reverts back to the positive topic.

   b. The client's physiology changes to reflect the positive state.

Some time ago, the author taught this basic technique to a psychology class in a local Community College. One of the students was the mother of young child. She needed to discipline the child but did not want to spank him. So, she created several anchors. For one anchor, she waited until the child would spontaneously jump up from what he was doing and give her a hug. She learned to notice the child's behavior and facial expressions when this was starting to happen. For another, she anchored the child's response to a favorite treat. For this one, she waited until she could see the enjoyment in his face. By repetition, she created a neurological link between each state and a different word and voice tone. Once the anchors were established, when she found the child getting into trouble, she would use the first anchor to interrupt his behavior. He would stop, look puzzled for a moment, then run to his mother, and give her a hug. When the child was making good choices, she would use the second anchor to support that choice.

There is one more subtlety that should be considered. Conditioned responses, anchors, are complex and dynamic behavioral relations between the anchor and the response. Because they are dynamic, the level to which the anchor provides the desired level of response can vary with the intensity of the last or the last several responses. If the anchor has been practiced many times and most of the responses have been consistently intense or growing in intensity, the final response will likewise be strong and positive. If there were few practice sessions and the responses were not of a high quality, the final result will suffer. In general, the more the anchor is practiced and the more it is refined, the better the long term results will be (Bouton, 1994; Bouton & Moody, 2004; Rescorla, 1988).

Anchoring a Resource

In a direct example—conversational anchoring can be done without the other person's conscious cooperation—the interviewer, counselor or therapist might establish rapport and make the observation that the client is looking stressed. Begin by suggesting that you and the client can do something to provide relief. Ask the client to think of a time when she felt comfortable, relaxed or in control—maybe all three. However, insofar as the client is now in an unresourceful state, they might find it difficult to think of a resource state in isolation. Instead, ask them about a time when they felt better. Engage them in conversation for a few minutes about that other time. The more you can get them to describe the resourceful memory in detail, the more fully they will be able to access it. Remember that the ability of an experience to focus attention depends upon the level to which it is represented in all of the major sensory systems −VAKOG (Kringlebach, 2005).

Having identified that resource and having already used it to break the original mood, you can now ask the client to associate fully into the experience. 'Step all the way into it as if you were really there, seeing it with your own eyes, hearing it with you own ears, feeling it in your body and even smelling and tasting it, if that's appropriate." The instructions might continue by suggesting that the subject make the images bigger and brighter and increase the volume of the sound in the memory so that it really compliments the experience. Remind them to adjust their posture and breathing so that they match the remembered experience. As you proceed, you will notice that there are some very specific changes happening to the client. The breath slows and deepens, patterns of muscle tension begin to melt, there are changes in skin color, and the lips swell slightly. As you notice these changes, reach over and (with the client's permission) touch the client, in way that can be replicated with the same speed, pressure and

location. Release the touch and, as the state increases, press it again. Repeat this cycle until you can see an immediate change in the client's physiology following the touch. This means that the client's state has changed.

In this example, you could easily replace the touch stimulus with a word like, "Relaaaxxx," so long as you can repeat it with the same volume and tonality. After practicing it or using it a few times, that word or touch could become a relatively permanent tool as you and the client continue to work together.

One of the important considerations when using anchors is the depth and purity of the felt state. Anchors can be created so that they incorporate much of the content and context surrounding the original circumstance. In these cases, the anchor is best used in a similar or comparable circumstance. That is, if you are using an experience from a sports context—the perfect game, the perfect shot, the feel of the throw—it is best used in a similar and emotionally congruent context: another sport, playing a musical instrument, etc. If it is used in a non-matching context, facing a job interview, it may be perceived as artificial or inappropriate. For this reason, content-related anchors need to be used with an eye towards their goodness of fit with the target behavior. The example of conversational anchoring given above is this type of anchor.

The second kind of anchor is the content-free anchor. At the root of each anchor is a genuine physical or emotional response. That response is yours (in self-anchoring) or your subject's (when you are anchoring someone else's response); even though you may have created a trigger to elicit it, it is still a *genuine* emotional response. Because the root of every anchor is a relatively undifferentiated emotional state that stands apart from the memory used to evoke it, it is possible to modify the present time experience of the resource so that it is no longer about the

memory, but about the feeling that that is being experienced in the present. Eliminating content and context will not affect the memory, the memory remains intact and functional, but using this process allows the anchor to connection to a relatively pure, content-free experience of the emotion that lies beneath the memory. This is a feeling that can be applied to any circumstance.

Stripping content from a resource state is often done by taking advantage of the limited capacity of short term memory. As originally observed by George Miller (1957), the capacity of short term memory has a capacity of five to nine elements. They may be units—independent numbers, letters or nonsense syllables; chunks—words, phrases or sequences; or other associated elements. Content can be stripped from an emotionally laden memory or experience by spending more and more conscious attention on real and unreal aspects of the feeling. As the number of details linked to the feeling increase, the capacity to retain contextual information decreases until the whole of conscious attention becomes focused on the feeling itself. Some of the more unreal details may include the feeling's shape, color, resonance, flavor, whether it makes a sound and the way it moves. After spending time focusing on these aspects of the feeling, the context and content associated with the memory fade and a relatively pure felt state is created (Gray, 2005, 2008a, b).

Anchors can be used to make therapeutic changes transportable. One of the problems with classical psychotherapy is that changes made in the therapeutic context become anchored to the therapist, the office or other context. When the client learns to create an anchor for the response, they are able to transfer their learnings to other contexts (Bandler & Grinder, 1975, 1979).

Generalization and Future-pacing

An important issue about anchors is that they tend to be sensitive to contexts. Pavlov found that after training, if his dogs were moved to a different room, or the room was painted a different color, they often had to be retrained. The training took less time—fewer repetitions—but the response still had to be reestablished. This indicates that that the changed context impacted their ability to express the response—the cue was no longer strong enough, in comparison to the changed circumstance, to elicit the previously learned response. Because this problem seems to carry over into humans, it is very important that anchors be practiced in several contexts. Once an anchor has been established in one place, it needs to be re-established in other contexts. This will ensure that the behavior will remain strong and that it will generalize to still other contexts. Most people find that once they have established an anchor so that it works in two or more contexts, it will then, generally work in almost any other (Bouton, 1994; Bouton & Moody, 2004; Pavlov, 1927; Rescorla, 1988).

Another means of making sure that an anchor will work in another circumstance is by using what NLP calls future pacing. Future pacing is imagined (or imaginal) practice that links a current behavior to another place or time. If we begin with the understanding that a remembered event is a re-creation of that experience in the body/mind of the person remembering it, we can then understand imagined practice as the memory of an anticipated event in another place or time. Future pacing does not guarantee that the behavior will become automatically accessible in the new circumstances but it does guarantee that the participant will be more likely to remember the technique and that it will take fewer practice repetitions to fully awaken it in that context (Bandler & Grinder, 1975, 1979, 1985; Damasio, 1994; Driskell, Copper & Moran, 1994; Linden & Perutz, 2003; Martin & Hall, 1995; Wohldmann, Healy & Bourne, 2007).

By firing off the anchor while imagining another place or time, or while imagining firing off the anchor in that new place or time, we create an experiential link between the present experience and the imagined context. The net effect of this linkage or chaining is to 1) increase the probability that the behavior will occur in that place or time or 2) attach the current feeling state to that other circumstance, thereby changing feelings that we anticipate having in that context. This is often used to eliminate stage fright and test anxiety (Bandler & Grinder, 1975, 1979; Gray, 2008b).

Anchors can also be used as subtle—or not so subtle rewards—and as such they can be used to shape behavior. Moreover, anchors can be chained so that one anchor evokes another.

Michael Breen (2008) suggests that we listen to the patterns in someone's conversation and there, we will hear a chain of associations. One event and its associated emotion will often evoke another with a similar emotional charge. In such cases, people tend to loop through the emotional cycle. As the experience deepens, a series of internal associations that are connected to the felt state are repeatedly triggered and magnify the intensity of the state. This is common when people begin a cycle of depression or mania. In such cases a series of felt internal anchors evokes a felt state. This state feeds forward into the same chain of memories and internal markers, and amplifies the depth of the feeling.

Taking advantage of the same mechanisms, a positive state can become the focus of a growing positive loop of well being and self-empowerment. A strong positive state can be created and enhanced by noting the felt progress of excitement, curiosity or joy, as they grow through the body. The depth and intensity of the experience can be enhanced by allowing the subject to fully enjoy that experience and, while continuing to focus on the positive state, loop through the same sequence of subjective markers.

More explicitly, we are using what Damasio (1994) called *somatic markers*. If you begin remembering a positive experience, you may notice that there is a specific way that the emotion grows and spreads through your body. (Please note that the specific sequence that I'm providing is my own. Your experience may be different, so please take the time to notice how your experience moves through your body.) It might begin with a feeling of lightness in the forehead. You may then notice tightness at the back of the neck, a smile might follow that. Following the smile, there might come a feeling of warmth spreading down the front of the body centered on the midline. As you observe its development, the warm feeling may then spread down to your gut. After noting this process, become aware of just how good it feels and where the best part of that feeling is centered. As you do, imagine that you can now take that feeling of joy and circulate it, through your forehead, to the back of your neck, allowing it to magnify your smile, spreading down the midline, and so forth. Cycle through the sequence and note how it magnifies the feeling.

Sometimes, one set of emotions will awaken a pattern of movement to another emotion or experience. This can be related to triggering or kindling phenomena in which one experience leads to another, seemingly unrelated behavior. Watch someone as they begin to tell a funny story or try to tell a lie. Notice that there are sequences and set ups that they go through. Watch how some people have very specific triggers for different states, different actions and different behaviors. Each of these is an anchor that you can sometimes fire off, just by opening a certain topic of conversation or going to a certain place.

For some people the chains are so predictable that you know exactly 'where they are going.' This is a manifestation of anchoring or associative conditioning. Associations are often linked more by feelings than they are by literal content (Breen, 2008).

In some sense, Freud's technique of free association, and Jung's active imagination were based on just such associative chains. The emotional charge associated with any given idea often has links to other ideas which are more likely to follow. Sometimes, when you have watched and listened to someone over a period of time, you can recognize these chains and create a signal (anchor) that will allow you to evoke the entire chain.

As mentioned above, because anchors awaken real felt experiences that are essentially identical to the originals, they can provide powerful reinforcement—they can be used to increase the probability of the response that immediately precedes them, and they can provide a significant means of discouraging behavior as well. Rapport can be used in just such a way.

Rapport is one of those behaviors that is so deeply embedded in what it means to be human that it may not only represent an example of a conditioned response, but it also serves as a potent reward. Notice how good it feels to establish rapport with someone to whom you are attracted, or with whom you have business. Notice how creepy rapport can feel when the other person is obnoxious, or you just don't want anything to do with them. Mismatching works as a stimulus that sends the message, "This conversation is over." Or, more potently, "Drop dead, creep." On a more subtle level, some communicators practice matching and mismatching to various degrees depending upon how the conversation meets their needs. As the conversation flows in a positive direction, all of the elements of rapport are brought to play. As the conversation drifts from the target, elements of rapport are selectively withheld.

Review

Anchoring is the NLP term for creating a Pavlovian or conditioned response.

The stimulus can be established by a touch, a word, a gesture or a motion; anything that is consistently repeatable.

There are content-free anchors and anchors that carry contextual information. It is important to know which is which.

Anchors can be practiced in multiple situations or future paced to insure that they transfer to new contexts.

A content-free anchor is created by focusing on the abstract elements of the experience until the memory, content and context fade away.

Anchors may be observed in the chaining of ideas and responses as one idea repeatedly evokes another.

References

Bandler, R. & Grinder, J. (1975). *The Structure of magic I.* Cupertino, Calif.: Science and
    Behavior Books.

Bandler, R. & Grinder, J. (1979). *Frogs into princes.* Moab, Ut: Real People Press.

Bandler, R. & Grinder, J. (1982). R*eframing: Neuro-Linguistic Programming and the
    transformation of meaning.* Moab, UT: Real People Press.

Bouton, M. E. (1994). "Conditioning, remembering, and forgetting." *Journal of Experimental
    Psychology: Animal Behavior Processes, 20*(3): 219-231.

Bouton, M. E., & Moody, E. W. (2004). Memory processes in classical conditioning.
    Neuroscience & Biobehavioral Reviews, 28(7), 663-674.

Breen, M. (2008). What they don't tell you about anchoring in seminars." Retrieved from,
    http://www.nlp-anchoring.com/
    What_They_Dont_Tell_You_About_Anchoring_In_Seminars.pdf

Damasio, A. R. (1994). *Descartes' error*. NY: G. P. Putnam.

Diamond, D., Campbell, A., Park, C., Halonen, J., & Zoladz, P. (2007). The temporal dynamics

    model of emotional memory processing: A synthesis on the neurobiological basis of

    stress-induced amnesia, flashbulb and traumatic memories, and the Yerkes-Dodson Law.

    Neural Plasticity, 2007,1-33. doi:10.1155/2007/60803.

Dilts, R. and Delozier, J. (2000). *The encyclopedia of systemic neuro-linguistic programming*

    and nlp new coding. Scotts Valley, CA: NLP University Press. Retrieved from

    www.nlpu.com

Domjan, M. (2005). Pavlovian conditioning: A functional perspective. *Annual Review of*

    Psychology, 56(1), 179-206. doi:10.1146/annurev.psych.55.090902.141409

Driskell, J., Copper, C., & Moran, A. (1994). Does mental practice enhance performance?

    Journal of Applied Psychology, 79(4), 481-492

Gray, Richard M. (2005). *Thinking about drugs and addiction.* Boulder, CO: AnchorPoint. On-

    line article available at: http://www.nlpcomprehensive.com/articles/AddictionsGray.html

Gray, R. (2008a). About *addictions: Notes from psychology, neuroscience and NLP*. Lulu.com.

    http://www.lulu.com/content/3497961.

Gray, R. (2008b). *Transforming futures: The Brooklyn Program facilitators manual*. Lulu.com.

    http://www.lulu.com/content/2267218.

Klein, S. B. (2008). *Learning: Principles and applications (5th Ed.).* Thousand Oaks, CA: Sage

Kringelbach, M. L. (2005). The human orbitofrontal cortex: Linking reward to hedonic

    experience. *Nature Reviews: Neuroscience, 6,* September 2005, P. 691.

Linden, A. & Perutz, K. (1998). *Mindworks: NLP tools for building a better life.* NY: Berkley

    Publishing Group.

Lundström, J. N., & Olsson, M. J. (2010). Functional neuronal processing of human body odors.

In L. Gerald (Ed.), *Vitamins & hormones*, Vol. 83, pp. 1-23). Salt Lake City, UT:

Academic Press.

Martin, K., & Hall, C. (1995). Using mental imagery to enhance intrinsic motivation. *Journal of*

Sport & Exercise Psychology, 17(1), 54-69.

Miller, G. (1956). The magical number seven, plus or minus two. *The Psychological Review, 63,*

81-97.

Morris, R. G. M. (2006). Elements of a neurobiological theory of hippocampal function: The role of

synaptic plasticity, synaptic tagging and schemas. *European Journal of Neuroscience, 23*(11),

2829-2846.

O'Connor, J. & Seymour, J. (1990). *Introducing NLP*. London: Element.

Pavlov, I. P. (1927). Conditioned reflexes: An investigation of the physiological activity of the

cerebral cortex (G. V. Anrep, Trans.). Retrieved from http://psychclassics.yorku.

ca/Pavlov/

Rescorla, R. (1988). Pavlovian conditioning: It's not what you think it is. *American Psychologist,*

43(3), pp. 151-160.

Wake, L. (2010). *NLP principles in practice*. St.Albans, Hertfordshire, UK: Ecademy Press.

Wohldmann, E., Healy, A., & Bourne, L. (2007). Pushing the limits of imagination: Mental practice for learning sequences. *Journal of Experimental Psychology: Learning, Memory, and Cognition,* 33(1), 254-261. doi:10.1037/0278-7393.33.1.254.