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Many years ago, while attending graduate school at the University of Louisville, I was required to complete a major behavioral science project in order to fulfill the requirements for a certain behavior modification course. My partner in this endeavor and I approached our professor with a research proposal that would allow us to study the compulsive gambling phenomenon within a cross section of university students and faculty. Our professor was cautiously agreeable to such a study but warned us that the gambling instrument that we selected for this study must be highly controllable in terms of variables in order for our completed project to have any chance of producing statistically relevant data. The professor also admonished us to please try to keep our compulsive gambling project within the confines of the law if at all possible.

After a great deal of deliberation, it was decided that we would focus our compulsive gambling study within the context of paramutual wagering at an animal racing event. But, what kind of an animal racing event? This decision proved to be more difficult. We would have to choose an animal type that we could financially afford and one that could be trained to competitively race within a relatively short period of time. We also felt that it would be extremely important, in order to assure success in training, that we hold a decided edge in the area of intellectual superiority. Toward these ends several possible options were explored: horses, dogs, rats, mice, turtles, jellyfish and others. Finally it was decided! The animal we would choose-the animal that would be of no threat to our frail intellects-would be the spirited, southern Kentucky chicken.

At this point I must pause and instruct you to clear your heads of any thoughts having to do with compulsive gambling, for this paper is not at all about compulsive gambling but rather addresses itself to the kingly sport of chicken racing!

It was a proud day when I arrived home to my new wife in our small apartment with my six baby chickens, each just bursting with energy and waiting to be turned into a fine tuned racing machine.

Now, for those of you who are somewhat familiar with my wife and have already dismissed my story as total fiction as you know for a fact that there is no way that my wife would have ever allowed six undisciplined chickens to move in with us, for you doubters I would ask that you reflect back to when you were first married, back to a time when you were intolerably handsome, terrifically virile and just about infallible; back before your wife discovered a few of your small imperfections and began developing her house rules for you to abide by. Some of you will have to think back further than others, and some may not be able to think of a time when your wife didn't have rules laid out for you so as to assure your proper conduct.

Fortunately for me back at that point in time my wife had yet to develop the "no chickens in the house" rule. Unfortunately for me she was astute enough to quickly develop the "They're your chickens and you clean up after them" rule. Editor's comment: "George's last statement is not totally accurate, his good wife Sarah actually cleaned up after the crummy chickens more than he did." Gentlemen, I have learned a valuable lesson in the writing of this paper. Never ask your wife to edit your work (I didn't let her see this last

sentence). "Oh, yes I did."

I don't know of any fragrance that is any more distinctive than the smell of a brood of chickens who have been left to their own devices in a closed area for a goodly period of time. Upon entering my apartment each afternoon my olfactory senses would instantly remind me of the presence of my little roommates, as my eyes began to tear and my throat began to close.

Now I know that some of you are thinking "Gee, maybe some day I too could have my own stable of racing chicks"; so, it is now my intent to instruct you in the finer points of training competitive racing chickens.

My birds were kept in a quiet, dimly-lighted enclosure, and they were fed each day at approximately the same time so to allow for consistency and to rule out the possibility of significant training distractions. The first rule that I must tell you about in attempting to train a brood of young chicks, and the rule which must never be broken, is, "Never lie to a chicken." In order to build any form of meaningful and lasting relationship with chickens, when you promise them something, you must always keep your word, with no exceptions.

The first phase of the chicken's training, the classical conditioning phase, is wherein we go about structuring and intensifying already existing primary reinforcers, which in this case would be food and water, and through the use of these primary reinforcers we would train up some very strong secondary reinforcers. For our purposes the secondary reinforcers were loud hand clapping and light.

Each day, when the chicks were fed, a tape recording of loud hand clapping would be activated outside their enclosure some thirty seconds before food and water were introduced into their box. Ten seconds before it was time to introduce the food and water, a light suspended within their enclosure would come on. When the food was finally introduced, it would be placed directly beneath the light. Both light and recording were kept on until their feeding period was over.

Within four days of using this very regimented feeding procedure, some very pronounced and predictable behavior were observed. When the hand clapping recording came on, the birds became quite vocal and excited, running around and around in their enclosure. When the light came on, the chicks' behavior escalated to a more manic state as they attempted to get as close to the light as they could by piling on top of each other forming a yellow pyramid.

For the behavioral purist amongst you, what has occurred here is that two very strong auditory and visual secondary reinforcers, handclapping and light, have been trained up by consistently and exclusively associating these stimuli with primary reinforcers-food and water. These trained-up responses are not far removed from Pavlov's famous salivating dog whose behavior was of course brought on by the bell ringing stimulus. In human-like terms, the activation of the handclapping recording equated to "Go wash your hands and get ready for supper" and the light popping on of course meant "Soups on, come and get it."

If I might digress from all of these training procedures for a moment, I would like to share with you some observations I have experienced in another area. When my partner and I first began working with the baby chicks, it quickly became necessary to establish a means of visually identifying each one from all the rest, as one baby chicken looks pretty much like all the other baby chickens. Accordingly, we painted the top of each of their heads with different shades of food coloring. Within a few days, to our horror, several of the chickens began showing various degrees of baldness in the area where the coloring had been applied. After some study of this problem, it became obvious that what we were actually observing was the "Pecking Order" phenomenon, which Webster defines as "The basic pattern of social organization within a flock of poultry in which each bird pecks another lower in the scale without fear of retaliation and submits to pecking by one of higher rank." The unique aspect for our birds regarding this phenomenon was that we had unknowingly provided them a painted target upon which to concentrate their pecking efforts. Over a period of time, it became painfully obvious, speaking for the chickens of course, as to which chicks were at the top of the social ladder, which ones were at the very bottom and which were somewhere in between, as determined by their degree of baldness. Reflecting upon these observations, perhaps a whole new area of research could be justified to study the possible correlation between "hen pecked" spouses and husbands who are fast becoming bald.

The second phase of this fowl training was somewhat more difficult and necessitated the use of a training technique known as "Backward chaining". Backward chaining is conditioning a response in reverse sequence, starting with the most simplistic demand and gradually

adding additional demands while keeping the reward constant. This stimulus-response chaining technique is often used when working with lower animals and with severely retarded individuals who need to learn self help skills such as feeding themselves.

To begin the backward chaining, the chicks were placed under a box just inches from the finish line of a standard, straight, 15 foot enclosed chicken track. To the far side of the finish line were feeding containers holding food and water. Directly adjacent to the feeding containers were positioned our lamp and tape recorder. The tape player was turned on and the chicks predictably began to display their excitable behavior. When the box was lifted, the chicks immediately zeroed in on the light and ran over to it to begin feeding. All the chickens were allowed to eat at least a small amount to assure their response reinforcement, but they were not allowed to eat so much as to become satiated and no longer interested in further ventures down the track. At this point the birds were placed back into the darkened box, the hand clapping was turned off, and the starting box was moved back up the track an additional foot from the finish line to await the training cycle to begin anew.

Oh, I forgot to tell you earlier, this is not just the usual, everyday, common variety chicken track, no, this track features steeple chase racing with several hurdles and a tunnel which must be negotiated. I also forgot to tell you that our fifteen foot track took up the entire hallway of our small apartment and trips down the hall to the bathroom were strictly forbidden while training was in progress. Unfortunately, the chickens showed little if any respect for our bathroom rule and exercised their relief options whenever the

spirit moved them.

The total backward chaining process was spread over a three day period with the chicks being worked with for short periods of time not exceeding one half hour. As the backward chaining progressed, the starting box was gradually moved further up the track away from the food as the ritualistic training pattern was repeated over and over and over again. Also, along the way additional challenges to the chicks, such as the hurdles and tunnel, were introduced to the course as we continued to increase the distance for the chickens to run in order to reach their destination.

The chickens proved to be much more patient than their trainers during this very repetitive ordeal. Finally, though, we became satisfied with their performance and these birds of questionable blood lines were ready to make their racing debut. Some of the baby chicks were able to negotiate the fifteen foot track, jump the hurdles, and pass through the tunnel at unbelievable speeds. Some were clocked at times of less than four seconds which is pretty impressive for an animal that only stands some three inches high.

Chicken Racing Day was announced at the University and a throng of anxious students and faculty descended upon our little racing track not knowing that their own quirky behaviors would be the substance of our compulsive gambling study. The first race was called, the recorder and light were turned on and the starting box was opened to begin the race. Six wild chickens quickly broke from the box and hurdled themselves down the track.

One chick, "Chicken Little" I believe, took an early lead but pulled up just inches short of the finish line and began pecking at the ground; the other five chickens quickly blew by and "Chicken Little" finished dead last. All of the other races proved to be just as unpredictable as the first, much to the chagrin of the more serious wagers. The chickens, in their haste to complete the course, showed absolutely no respect for one another. Much pushing, shoving, and jockeying for position were observed by the track judges, and several chicks were seen to go tumbling end-over-end as they miscalculated their hurdle stride.

After the last race was over and the crowd had dispersed, my partner and I, feeling cocky with our recent success, began discussing what would happen if we were to chance breaking our one unbreakable training rule "Never lie to the chickens." We quickly formulated our devious plan of action and set about to carry it out. We required the chickens to go through their usual racing routine as they had done dozens of times before. However, as the chickens crossed the finish line and began feeding, the light suspended over the food and the tape player were both turned off leaving the chicks in semi-darkness. While this was occurring, a tape player and light were activated back up the track at the starting box. Confronted with this confusing turn of events, the chicks stopped feeding and huddled together for comfort, but in a few moments they were observed to scurry back up the track and get back in their box. What this experiment demonstrated for us was that secondary reinforcers can actually prove to be stronger stimulus than the primary reinforcers which they originally represented.



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You may ask, what was the culmination of this chicken-livered project? Well, a second racing outing was later planned at the university, and in retrospect, this event proved to be a grave error in judgement that ultimately led to our undoing. We failed to take into account the rapid maturation rate for chickens.

As in all highly competitive sports, competitors who are left to their own selfish devices and are not offered a firm guiding hand can become corruptible, and the enthusiastic innocence of youth can give way to greed and licentiousness.

For alas, in the very first race, instead of traversing the racing course in the usually prescribed manner, two of the slightly more mature birds, with much flapping and beating of wings, left the ground and soared over their competitors to arrive at the finish somewhat prematurely. All of the basic principles of fair play had been compromised for a mere hand of chicken feed.

Many shouts of "foul!", "foul!" went up from the incensed crowd and the track proprietors were forced to close down the track and beat a hasty retreat.

What ever happened to this brood of paltry poultry? Well, they were unceremoniously packed up and shipped to a southern Kentucky farm where they probably laid a few eggs, consumed a goodly number of bugs, pecked to death an innocent flashlight bearing farmer on a nocturnal visit to the chicken yard, and eventually became the key ingredient in a well-known cure for the common cold.

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Surely there is a lesson to be learned for each of us in this  
belabored tale somewhere.

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