

PSYCHOLOGY OF SHOOTING

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My talk is to be on psychology of shooting, but I'm not sure we are using the proper term by talking about psychology in relation to shooting. However, I've used it and will probably continue to use it, since it is a term we understand and a medium of reference we can relate to. Yet it isn't really descriptive of what we do.

I think what we are actually talking about is a form of mental training applied to competition. You acquire this mental training in practice for use in competition. Psychology is an all encompassing word. Shooters come to me at Fort Benning and want me to solve a problem they are having with their shooting. However, there is no pill, no shortcut, no prescription that anyone can give you to solve your problems. Mental training, just like physical training, is a long-term training exercise. There is nothing magical about it. There are no shortcuts to it just as there are no shortcuts to physical training. In order to be a complete shooter, first you must train your physical skills. Once you have developed to the point that your positions are acceptable, so that you can get into the same position reasonably close everytime, you have reached the point where you can begin to learn how to shoot. From that point on, how much thought and how well you think about your shooting will be in direct proportion to what success you have. I'd like for you to remember that. How well you think will be in direct proportion to how well you shoot. There are very few cases on record where an individual who is not capable of thinking and analyzing what he is doing, has achieved success in any sport. This is particularly true of shooting.

Let's get into shooting. An uninitiated spectator walks up on the firing line and watches a seasoned competitor fire a shot. He lifts up the gun, aims, squeezes the trigger and fires a perfect shot. It looks so simple, he thinks anyone can do it. When he tries it, he finds that he is all over the target just trying to hold the gun. He thinks that shooting is some inherited talent that he has been deprived of - like the perfect pitch of a musical instrument. So, he puts down the gun and decides he doesn't have the ability to do this. This is unfortunate.

Shooting is not a talent that you inherit, shooting is a talent that you learn. One of the things that makes shooting so difficult is the complex way we use our muscles in shooting. You use every muscle in your body in shooting. You are using your muscles with a certain amount of tension in them to hold the body still. In all other sports, you are moving the muscles. In shooting, you exercise a great deal of control to hold the body muscles still, except one - your trigger finger. If anything else except your trigger finger moves, you are in trouble. This is what makes it so complicated.

One way you learn to control all these muscles is through repetition. You do this with your training exercises. You develop good positions. Positions are very basic and cannot be underplayed. You must have good positions using bone-to-bone support. You simply can't shoot well without them. I don't want to downplay the importance of positions, but we are concentrating today on the mental aspect.

Now, I'm going to commit a little heresy here. I'm sure that most of you have been told all through your shooting career that you must do the same thing in training that you do in competition. Right? Wrong! You can't do the same thing in training you do in competition. No way. Now, let's back up. I'm giving you my ideas in order to stimulate your thought. You don't have to accept my ideas. Let me explain why I think you don't do the same thing in training you do in competition. In training you are trying to develop the motor muscles, the techniques, the pattern of hold, and your subconscious to the point that it does the work for you. When you get to a competition, you are not doing these things in the same way. In competition, you have adrenaline running; each shot is for record. Thus it is unlike training in which you may shoot a bad shot over, maybe a number of times, conducting experiments on many things, including your positions. You work out a system for shooting in competitions while training for competitions. In competition there is no longer a way to work it out.

In training you are training your subconscious and muscle memory groups. The subconscious is what makes your score for you. It is the difference between the good shooter and the mediocre shooter. In your day-in, day-out training program, the repetition you do - the time after time that you bring the rifle up, aim, shoot the shot, be it good, bad or indifferent - shooting it over again if its a bad one, repeating it, repeating it until you have it right, then continuing to repeat it once you have it right, until the muscle group that controls the exercise learns it thoroughly - is the factor that enables you to learn to shoot well. Every shot you shoot in practice is accompanied by your thoughts on the mechanics, the techniques. When you get to a competition, if you have to think about your techniques, your positions, you're not a shooter but a mechanic. You better be thinking about outside influences and let your subconscious take over. It will do the job for you.

How often has this happened to you? You're shooting a full course. You are shooting well - you're up to about ten shots and you have the best score going you have ever shot. You've got Bassham beat, you've got Margaret beat, all you have to do is get through these next ones. What do you do? You start being over-cautious, over-controlling. You take away the thing that got you there - your subconscious. You take your shooting over, start controlling the gun yourself and you blow it. This is known as choking. It really isn't. It's poor thinking. The thing that got you there is having trained your motor muscle mechanism to get you where you wanted to go.

Let's do a simple little motor exercise here. I want you to draw a little square with your finger in the air. Everybody do it. Keep drawing, a square, not a circle. Keep drawing. -----Okay, stop. When you first started to draw this square you were doing an exercise that was unnatural to you, because you hadn't done it before. When you first started to draw that square, you were concentrating on making that square, on making the corners exact. The longer you went along, the less you had to concentrate, then it became so easy you didn't have to think about it at all and yet you were doing it. It's the same as walking. You don't think how to walk, but once you did have to think about it when you were learning to walk for the first time. I'm trying to illustrate the difference between conscious and subconscious control of the muscles. This is what you do when you train your muscles to shoot.

What causes all this to take place? Medical science has recognized for a long time that the cerebrum is the most important part of the brain, because this is what gives man the ability to think and to reason, differentiating him from the rest of the animal world. Lower animals don't have this ability, yet they have what we call instinct. A rabbit is uncanny in his ability to weave and run and elude a pack of hounds, yet we know the rabbit cannot think or cannot reason. His subconscious is the part of his brain that takes over his motor movements and gives him the ability to outwit the hounds. Medical science doesn't know how the subconscious works, they only know that it does.

So going back to the square. First you consciously drew it, then your subconscious took over and you were thinking probably verbally of something else. The exact same thing applies to shooting. In your training program, you are training your subconscious as well as your muscles to perform the act of shooting. Your muscles, controlled by your subconscious, perform as a conditioned reflex. Because of training, a conscious thought is not needed to activate the shooting muscles. The trigger finger performs on reflex conditioning by the subconscious. You know that when you think about shooting a shot, it's always a bad one. When you think, "now is the time to get it", you are behind it, it's gone. You're probably high man on the range with a six. You let it get by because you thought about it. You must train yourself to allow your subconscious to operate for you, and then allow it to operate, keeping your conscious mind on the external influences like the wind, sight picture, etc.

Now, the conscious must be able to inhibit the subconscious when necessary. When your sight picture is not solid enough and durable enough to produce a ten, then the conscious must stop your conditioned reflex from enacting your trigger finger. This is a result of training. It can happen, if you believe it can happen. I think there are many champion shooters who shoot well, but don't understand why they shoot well.

In 1963, at Fort Benning, I started to write a pamphlet on shooting. So, I began talking to shooters about what they were shooting and how they were shooting and why. It amazed me to find that not a single individual on the team - Anderson, Wigger, Foster or crew - could analyze what he was doing and why. Take a simple thing like sight picture. There wasn't a single individual who could tell me where he was focusing his eye. Wigger came the closest. It took us about six months to get this worked out. I remember Anderson, who at that time was being proclaimed the world's greatest shooter, insisted that he looked somewhere between his front sight and the target. This is impossible - you can't focus your eye in the middle of the room, you have to have something to look at. Yet this is what he thought he was doing. It took us about six months of shooters realistically and objectively analyzing what they were doing before we could write the book. We then had a fall out benefit. People started to shoot better because they were analyzing what they were doing and why. It continued to grow like Topsy - they are getting better all the time, because they are getting better at analyzing what they are doing.

Remember when I told you at the beginning today that how well you think will be in direct proportion to how well you shoot. You've got to be able to analyze what you are doing, duplicate those things that are good and forget the things that are bad. You don't want to think, for instance, "My shoulder moved on that shot.

Well, I won't move my shoulder on this shot." I guarantee you that shoulder will move on the next shot. You don't try to eliminate the bad things. You've got to think positively. Don't allow a negative thought to creep in under any circumstances. Now how does this tie into your subconscious? Very simply. You learn any skill through repetition, repetition, repetition - by doing it over and over and over. Golfers, when they are developing themselves to become professionals, hit four or five hundred golf balls a day, chip for two hours a day, putt three hours a day, month in and month out. Repetition. You must do the same thing. Now you don't shoot as often as you walk, so therefore it's a little more difficult to keep the muscles and the subconscious trained.

There are two rules about training the subconscious to develop the muscle groups. Number one - the more complicated the exercise the more complex the message that must go to the brain. Number two - the more complex the message that goes to the brain, the longer it's going to take to learn it. Let's talk about standing. The position is not difficult because the body in standing is not capable of shooting ten after ten after ten. It's difficult because it's impossible to duplicate an exact performance. Because you are alive. When you are alive the body is pumping blood all the time, the digestive process is putting food through the stomach, the diaphragm is bringing air into the lungs at intervals - all which cause minute changes in the center of gravity. Therefore, I feel it is impossible to place the gun in the exact same position for any two shots, because your center of gravity is changing while you're holding the gun. Your center of gravity changes constantly. It's changing while you are sitting here.

In all your positions, you use maximum bone support, minimum muscle support. You do this because it cuts down on body movement, fatigue, and cuts down on the possibility of involuntary movement. Nothing good can come of an involuntary movement. If shooting tens involved only the repetition of a single act, then shooting would be much simpler. But every act of shooting is different, every shot you shoot is different for reasons I mentioned above. There are no shooting acts exactly the same. Therefore everytime you start to squeeze the trigger it is a complex act. First the act is judgmental - moving from conscious to subconscious control in the process. Much, though never all, of shooting can be a learned reflex action. The part that can never be completely learned is trigger control. Simple things can be learned by reflex action - use of the eyes, control of the breath, head position, etc. These things can be completely controlled by reflex action. Trigger control is not as simple. It's very difficult to train the reflex to activate every time the rifle is in the middle of the ten ring because there is a question of duration. The hold is not long enough or pure enough for this to occur perfectly each time.

Now by this time you should have some questions. Someone ought to be having some doubts.

Goldsby: Would yoga help your training?

BP: I've done some experiments with yoga, and I'm not real sure we are working with yoga in its pure form. There are many vehicles you can use, if it assists you in training the muscles or the mind or the subconscious. Be sure the instructor is not out to make a quick buck, but really able to teach you. When I was in

Mexico we had a yoga instructor work with the shooters and their wives for about six months and it did a lot for them, in everything except their shooting. I don't know why. It did a lot of good, in fact some of the wives are still in the program. It's important that whatever you choose be sure it's taught in its pure form, not by a shortcut artist. To answer the question, I don't know. In the short experiments I have run, I couldn't see any advantages from it.

How many times have you been aiming, ready to shoot and a thought went through your mind, interfering with what you are doing? Have you had this happen? This is what we call having your concentration broken. Concentration is a term like psychology, in that I'm not sure we're using the right term. We use it because we can relate to it, so we'll continue to use it. One thing we do know, when this break occurs the result is disastrous. It's time to get off the firing line and get your head screwed back on.

TR: Sometimes in practice I'll be shooting tens thinking about something else. Then I realize I'm shooting tens, but haven't been thinking about shooting which is wrong. So I start thinking about shooting again and screw up the target.

BP: You've exemplified what I've been talking about. Your subconscious was doing it, then you took over. The best scores you've ever shot in your life were when you didn't have any particular thing on your mind. Your mind was relaxed and it was so easy. You pointed the gun, it settled and shot and you really didn't have anything to do with it.

Alan Marcum: It's subconscious concentration, as opposed to conscious concentration then. If you don't control your conscious concentration then it tends to interfere with your subconscious. Is this a correct interpretation?

BP: Yes, I think so. We don't know what the subconscious is, we can't define it, we don't know what it does. We really don't know how it operates, but we can make it do things by repetition.

AM: Then my question is, if you don't somehow direct your conscious it will try to take over the subconscious and it will screw up. Is that what you are saying? That since you are shooting, the best way to direct it is towards shooting.

BP: That's exactly right. But not toward a particular thing in shooting.

Mr. Rennie: The book the Inner Game of Tennis by W. Timothy Gallwey talks about this. The author says you tell your conscious what you want done without telling your subconscious precisely how to go about it. For example, if you want to hit a backhand stroke, you just tell your subconscious that you want to hit a backhand stroke, keep your eye on the ball and hit it. You don't tell your subconscious exactly how to grip the racket, how to stroke, how to place the feet, etc. The conscious gets you in position, but the subconscious performs all the little details and minute adjustments. It's sort of like placing yourself on automatic.

BP: Shooting is no different than any other individual sport except in the way you use your muscles. Most successful golfers and most successful tennis players visualize where they want the ball to go - the flight they want it to take,

where they want it to land - and allow the subconscious to swing the club or racket and let it go. This will also work with shooting.

A very successful training method and a very successful method of overcoming match pressure, is through this visualization of exactly what you want to do. Visualize yourself standing on the firing line with a firearm in your hand, standing outside your body, watching yourself. You have a good position, are squeezing the trigger, watching the recoil, watching the firearm settle back down, seeing the hold come right back into the middle of the target. You'd be surprised how often it does. Don't interfere with anything else, like technique. All you are doing is looking and imagining where you want the shot to go. Somehow, we don't know how, the subconscious, if you train it properly, will take over and produce a ten.

EP: Are you talking about transcendentalism?

BP: No.

IW: One doctor called it cybernetics.

BP: When I started talking about this many years ago it was called cybernetics. This got to be a disagreeable term among psychologists because the mind is not a computer. But I think to some degree we are talking about this. The result is arrived at by essentially the same method. The term you use to describe it is irrelevant. Cybernetics is one technique for training the subconscious to work. The big difference is that cybernetics works on the principle of making mistakes and then correcting them. It's surprising how few people you can get to utilize one of these techniques. You will find that a very good shooter, or a good athlete in any other sport, when he reaches a certain level, has arrived there by being very careful, controlling his experiments, keeping accurate records of what he does and how he does it, training himself meticulously until he gets to a certain point and starts winning consistently. Then often, he stops doing what got him there. He starts shooting a certain number of shots, and even though he analyzes what he's doing, his improvement stops. We seem to have a psychological barrier against a really top performance. Until we have lifted that barrier we will never know what we are capable of doing. We will never know what the maximum limit of a shooting score is until we lift this psychological barrier. One of the things that makes us think there is a barrier, is that when an athlete reaches the top, or near the top, he stops doing what got him there. The training devices have become routine. You get to the top and stop recording, stop self-analyzing and you become stagnant. I see it in all the top shooters we have in this country. There is not a single exception. I would bet you that there is not a top shooter in this country that concentrates fully on 75% of his or her shots. If they did, they would shoot all tens. Very few people shoot 75% tens. If you're concentrating fully and your subconscious is trained properly, and your fundamentals are correct, you'll shoot a ten everytime you shoot.

BP: Very few shooters in this country follow through 75% of the time. What does follow through mean to you?

EH: Continuing the act of firing after actually shooting the shot both mentally and physically.

BP: What do you mean by both mentally and physically?

EH: Well, letting the rifle recoil back in the same place without disturbing the position after the shot has actually left the barrel. And to continue thinking about my performance as I fired the shot.

BP: Marsha, what does it mean to you?

MB: After you fire the shot, you continue to hold your body still and watch the recoil so you can call your shot and analyze what you did in relation to where the shot hits.

TR: You shoot, and it's like you continue shooting. You don't move. You are conscious that you've shot and it's down there. You look down and see where the shot was and analyze what you did wrong.

BP: I'll take exception with one thing you said. Why would you analyze what you did wrong? Who cares what you did wrong? What you want to analyze is what you did right, then duplicate it. I was listening to a critique once being held by our MTU pistol shooters. I always have had a great deal of disagreement with some of the training techniques of our pistol shooters at Fort Benning. The man was giving a class on international pistol shooting. He said in effect, "You shoot the shot, determine what the error was and then correct the error." When he had finished, I went over to him and in a kidding way said, "I know why the rifle shooters win and the pistol shooters lose. You concentrate on your errors." You shoot a lot more good shots than you shoot bad ones. Since you shoot more good ones, you are bound to learn more from these. Don't try to learn from the bad ones - that's the basis of cybernetics.

Back to follow through. How many of you have four or five shots in every string that you can't really call? The shot is off call, but you kind of ignore it? You really don't know why it's off call, but it isn't there. Gloria says she has had one. Nine times out of ten, this is caused by lack of follow through. It can be another cause, but there are training exercises that can be done to cure these. But most of the time it's caused by lack of follow through. You should train yourself to follow through completely and watch the recoil of that firearm until it settles back down, visualize where that shot is supposed to be, record where it's supposed to be, look through the scope and check the wind and evaluate where it should be. If it isn't there, you will need to be more careful of your follow through.

A couple of years ago at Camp Perry, quite by accident I ran into Dr. Beausey, a psychologist who works with pro-sports teams, like football, racing and many other sports. I've been trying for a couple of years to get him to Fort Benning to conduct an experiment down there. This man had developed a program of eye exercises that have proven useful to athletes in other sports. I've tried them out and feel they would be valuable to us in shooting.

Let me oversimplify how the eye works. It's like a movie camera which takes a series of still shots. It makes you think you are constantly seeing everything that is going on. But you're not really seeing everything that's going on in this

room. Your eye is always moving, even when it looks still to you or someone else, taking the series of photographs. Let's use a football example. Say a receiver is going out for a pass. He looks back at the quarterback and he has a second or a second and a half to make a judgment as to where to place his hands to catch the ball. If his eyes are taking pictures at two frames per second, this means he is only seeing the football twice in one second in order to make that judgment. Now, if through a series of exercises we could improve his visual acuity so that he is seeing four frames per second, he has longer to see the ball and make the judgment as to where to place his hands. He really isn't seeing better, he's just using what he has a little better. To apply this to shooting, I think when Gloria shot her six, she was following through correctly, but was caught between frames! Seriously, I think this can happen.

Dr. Beausey did an interesting experiment for us at Camp Perry. He uses a little recording machine with a bridge over your nose that measures the movements of your eyes. You move your eyes left and right as quickly as you can. It was revealing because all of us who were right-handed shooters were right eyed. Our left eye, which is untrained, went everywhere. It was the opposite for left-handed shooters, their left eye was trained more highly. We had one Marine who had shot right-handed pistol for about ten years, then switched and shot left handed for about ten years. Both his eyes were straight, that is they could follow the line prescribed. This doctor also has a program called Alpha-bio feedback which teaches you to put yourself into Alpha state. Most top athletes have done this when they are performing extremely well. I've talked with most of our top shooters in trying to determine why they are doing well and why they are not doing well. I really believe Lanny is capable of putting himself into Alpha state at will, although I don't think he knows exactly what he's doing. I think he employs it without knowing how. Alpha is the state in which you're at your maximum concentration. Beta state, like we're in now conversing shows up on an oscilloscope as little fast moving jagged lines. There are two other forms of beta state; sleep and death, but let's not get concerned with these. Conversely, when in alpha state the sound wave is slow and drawn out.

Dr. Beausey once used this oscilloscope on karate competitors at a national championship, and could predict the eventual winners and losers in order of placement by watching their sound waves during practice days before and during the competition. You know how karate competitors stand first and concentrate before moving. You could see the waves begin to stretch out and slow down, then the competitor would scream and break the block. The guy who was eliminated first was never able to straighten out his waves. They remained jagged, meaning his concentration was not adequate. I think this could be valuable for shooters. This doctor has a method of teaching an athlete to place himself in alpha state at will. I hope I can get him to Fort Benning.

We need to get some questions now so we can have some discussion about subjects you have some doubt about. I have a doubt about a lot of subjects.

DZ: I have a question. When Writer is in training he shoots about two hundred shots standing a day which is an amazing number of shots per day. Then Kimes and Wigger and Margaret shoot forty to sixty shots per day and spend several hours doing it. You were talking about repetition. How do you feel about these different training methods? Which way should you train?

EP: I think it goes a little deeper than that. Let me go back to the days when Anderson was shooting and he was the only outstanding shooter we had. Anderson was a very, very deliberate shooter - very slow, slower than Margaret. And she's slower than molasses! He insisted that you could not shoot a shot well unless you had at least three holds on each shot standing. I always disagreed with him on this but I really couldn't prove it because he was the only really good shooter we had. It wasn't really disproved until Writer came along. I always argued with Anderson that he shot deliberate because it was consistent with his personality. Writer came along, and his personality is completely opposite, and his shooting technique is exactly the same as his personality. I've watched a lot of shooters and studied this a great deal. If you'll watch shooters you'll find that their shooting techniques and training techniques are completely consistent with their personality. If they are slow and deliberate, that's the way they will shoot and the way they will train. If all their actions are fast and quick, quick decisions, kind of flighty, maybe even a little flaky, then this is the technique they will use.

DZ: Then one is not better than the other?

EP: I don't think one is better than another. You would absolutely ruin Margaret if you had her shooting Writer's technique and you would ruin Writer if you had him shooting her technique. If you don't have a personality, you're in trouble!

MA: What if your personality is up and down, rather what if your emotions are up and down?

EP: You must control the emotions. If you don't, it's disastrous to your shooting score.

MB: Can you define what you mean by personality?

EP: I wish you hadn't asked that. I probably don't mean how easy a person is to get along with or how they project themselves. I mean their actions - the way they talk, the way they think, the way they move, and the way they make decisions. Some shooters are very deliberate in their thinking process and in their actions. Others are quick to make decisions, do things quickly, get it over with quickly. Now, you have observed the shooter who does things deliberately, then shoots quickly and gets it over with quickly, with an hour left in his standing time and all he has to talk about was all the eights that he shot and the bad score that he shot. No matter what technique you use, you should take full advantage of the time limits that you have. There is no point standing there admiring your shots if your subconscious is working for you and conditions are good. You should go ahead and get them off. But there's no point in just getting them off, with an hour left to cry about a bad score.

RF: Would you advise a change in personality? I fully realize the advantage of shooting fast like Writer, but I shoot slow.

EP: Now, that is dedication! No, I don't think you can change your personality and I don't think you should try. You can get to know yourself better which

may help. But don't try to change your personality. I think Margaret would ruin herself if she attempted to shoot fast. I think you ought to dance with the one who brought you. Stick to what works for you.

DK: Can you come up with a more flexible approach?

BP: You may be shooting entirely too slow for both your own good and personality. You may be able to either speed it up or slow it down to fit you. You must work this out for yourself by attention to what works for you. Your shooting diary can help you know yourself better in this regard.

GP: Do you change the speed according to your emotions that day?

BP: No. Your emotions must not control what you are doing. If you feel upset, or excited or calm, you must control this or you won't perform well. This is completely separate from the personality thing.

MA: I know Rod is really concerned about this, because he has talked with Writer about it. Are there any guidelines you can give him as to how he can better understand his basic personality and determine whether or not it fits his shooting?

BP: No, there isn't, because I haven't had the opportunity to know Rod that well. I think that Writer is just as wrong in his thinking everyone should shoot fast as Anderson was wrong in thinking no one should shoot fast. There is a happy medium for everybody and you've got to find it for yourself. Rod, you probably will not be able to shoot as fast as Writer or you'll find yourself in the white. However, if you do everything you do pretty quickly, you don't hesitate over making decisions, you get it over, get it done with, you may be able to shoot faster. Probably not as fast as Writer who has developed this to a fine edge and elevated it to a science!

We were shooting in Germany once when the Secretary-General of the International Shooting Union was watching Writer shoot. He made some disparaging remarks that no one could shoot that fast and shoot well. The wind was blowing a gale and Writer shot a 375 standing. No one else on the range broke 360. I thoroughly enjoyed my discussions with Anderson after Writer came along and I watched Anderson's ideas change. He recognized that there was another way of doing things and this was quite a revelation. His was not the only way. There was another way. I'd been trying to tell him this for five years. Now Anderson didn't change his style, although he has learned to shoot on the first hold more often.

MB: I want to ask about training. In your book you talk about scheduling.

BP: This is not important. The important thing is achieving your goals. Are you? No? Then maybe you are setting your goals too high.

MB: Could you just talk about scheduling. I can't seem to schedule the in-between so I reach my goals. Or something always happens to my schedule.

BP: Something will happen to most of them. Any time you make a long-range program, there are many things that will happen between now and the goal time which

forces a modification of the schedule. You must be flexible. You may not be able to reach the goal in the time frame you have established. You may need to go onto the next step without achieving that goal. You may find the next goal is achieved more quickly than you scheduled.

Establishment of a training program is extremely important to any individual who has aspirations of becoming a good shooter, a world class shooter. The guy who goes out on Sunday to plink doesn't need this, it isn't important to him because he's having fun. The game has a place for him too. But the person who is really serious about his shooting, who wants to represent the United States, or win a national championship, must outline how he is going to get there. So the first thing you do is establish the long-range goal that you want to achieve. It might be the 1980 Olympics. The goal must be realistic, something you are capable of achieving. It wouldn't be realistic for you to say you're going to win the 1976 Olympics - you couldn't even make the team.

The second thing is to back up to where you are now and see what progress you are going to have to make to achieve your goal. Then you must study how you are going to have to make that progress. What training will you have to undergo? How much change will you have to make? Determine how much improvement you're going to have to make in each of your positions to get to the point that you can shoot a score that will win the 1980 Olympics.

Your goal to win the 1980 Olympics is nothing unless you put a score to it. Desire is simply unharnessed energy. Until you tie it down, you don't really have anything. To say you're going to win the 1980 Olympics isn't saying anything. To say you're going to win the 1980 Olympics with an 1185 is saying something. It's a very high goal and may not be achieved. You must be realistic. If you don't feel you have a chance in the world of shooting an 1185, then it would be useless to set that goal because you won't reach it. You already have a psychological block to begin with. If you're shooting an 1115 now and decide that by 1980 you can be shooting an 1160, this is realistic. People are shooting scores in the 1160's and you can relate to it. It would be a very rare individual who could accept an 1185 as a goal without creating a psychological block. Your goal should be above the current world record, however, if you are going for something like this. If you're shooting for last year's record, you're going to get beat.

Then you must determine how many matches you're going to have to shoot in order to improve your training methods. This is really all they are for. In my opinion, you don't use the same techniques in training that you use in competition. In training you train the muscle groups, you train the mental processes, you train the subconscious, and you prove it in a match. You don't make the match the end result in your training program. It is just another step in your training program. You constantly evaluate this training program. If you're falling behind, you're going to have to revamp it. I'm not sure exactly how you're going to do this. If you are making progress in prone and kneeling, but not in standing, then you're going to have to have help from someone. In all probability, if you will take your left hand and put it over your left ear, and your right hand and put it over your right ear, you'll find the problem somewhere in between! You will need to reevaluate your program in order to get your progress chart back on track. Once you've got your three positions and fundamentals down, some guy telling you to move your hand or move your foot is not going to offer you any great improvement.

You're capable of doing this yourself. Don't go to some guy who looks at your target pattern and makes a determination because he doesn't know what he's talking about. After you have the fundamentals and the techniques, in all probability your problem is not mechanical. After you have these, 90% of your improvement will be made through proper mental training. If you're not improving in your score in each position, somewhere you have a psychological block.

Take a look down the line and find the guy with the best position, the prettiest position and you'll find he is rarely the champion. Of all the shooters that I have coached, in all the places that I've coached, the guy that has the best hold is Olegario Vasquez of Mexico. He ought to be a world champion. He simply lacks the consuming desire to work hard enough to be a champion. He holds the world record in air rifle, but in forty shots with a hold like he's got, you can stumble into a good score occasionally. Pure mechanical achievement is not going to get you where you need to go. So if you're having a problem achieving your goals, you need to go to someone who is capable of helping you. Not someone who will tell you what you're doing wrong. There is no way that I would watch any of you people and tell you that you're doing it wrong. I can't determine if you are doing it wrong or if you are doing it right. I can't see through your sights. I can watch you doing it day after day and tell you if you're doing it differently.

These are only four things a position can do for you. It can give you a good hold, it can give you reasonable body comfort, it can permit normal body functioning, and it must be legal. That's all. So I will defy anybody to look at your position and say you're wrong, because he can't see through your sights. If your goal is realistic and you think your progress is not being achieved, then you need someone to talk to who can act as a sounding board for you so that you can arrive at a solution to your own problem. Nobody can tell you what your problem is. You will have to determine this yourself. But you need a long-term project just like learning a position. Mental training takes time. In order to be a real help to a shooter, a coach must work with him on the range, and for a long period of time. Just coming to talk for an hour now and then doesn't get it. You must know an individual well to help him think properly, analyze properly and execute properly.

One of the problems in establishing a training goal is what is termed "peaking out". I submit that there is no such thing as peaking out. You have established the wrong goals. Anytime you have achieved a goal that you have set for yourself, there is an emotional letdown at that point. If you established that your goal is making the 1976 Olympic team, not winning the gold medal, you will have a letdown after making the team, before shooting the Olympics. You have achieved a goal. It will take some time to get back where you were. Now the individual who believes in peaking would say you have peaked, when you have this emotional letdown after making the team. However, I say you have selected the wrong goals.

DZ: What about slumps?

BP: Slumps are an emotional letdown, even when they aren't after a particular goal. As long as you can keep your concentration level on an even keel and remain healthy and in good condition, you can keep your shooting on an even keel. You can keep your golf on an even keel. No one has found a way to do it all the time. But a slump is a mental training problem. If you expect to have a slump, you're going to have one.

GP: We shoot a match nearly every weekend. I want to do well in those matches, so even when I feel I should maybe change something, I don't because my score would go down. I try to stay on an even keel. But I'm not really improving as much as I think I should be.

BP: Are you expected to win every match you shoot?

GP: Yes.

EH: Yes, especially in college. If you're on scholarship, you have to win.

DZ: Collegiate shooting is really a pressure situation. You are really put down if you don't win.

BP: You may be able to win every match, but you won't progress without being able to use match experience as part of your total experiment. You may develop a technique while training that you find does not work under match pressure. I don't have a solution, except to say that you must use matches as a training vehicle just as you use training exercises as a training vehicle. Right after you make a change you usually have a rapid improvement, but it may not be permanent. You will need to evaluate the change in matches over a period of time. It will take trial in competition to determine if it's useful. This is a hazard if you're expected to win.

DZ: Could you give an idea of how much training should be required at the collegiate level to improve one's self? You stated this for a world class shooter in your book, but I'm wondering about the collegiate level.

BP: I don't have that much feel for a college shooter. I have never worked with collegiate shooters. One thing I can say, since one of you mentioned exam time, is that if you have a period of interference so that you're not able to concentrate fully on your shooting, in my opinion, you should discontinue the shooting for awhile until you can once again put your whole thought into it. Anytime that you can't put your whole effort into each individual shot, you should stop shooting until you can. I think you can learn harmful habits. In an individual training session, when you've reached the point that you shoot seven or eight shots without fully concentrating you should take a break. You're training the subconscious in bad habits. At Fort Benning, there have been times when I've sent an individual home. If he can't concentrate, I don't want him. Take a day or two days and come back fresh so that you really want to shoot. Now I'm not talking about four or five days in a row. If a character is going to do this four or five days in a row, I may not want him there at all.

MA: Could you talk about how to concentrate on shooting when you have a number of other responsibilities that must be met. As we get older and have professions, families, etc., the time that can be devoted to shooting is less. I'm sure the reserve shooters face this difficulty.

BP: I think after you have achieved world class level performance, you don't need nearly as much practice. I'm talking about the average individual now, I'm not talking about Margaret. I can use as an example the Fort Benning people who

have left. While at Benning they shot a great deal, until they had their positions refined. After leaving Benning, they could drop back to 20% of that and still keep the same level of proficiency or even a little higher. There are some exceptions. Writer was mentioned because his training technique must allow him to shoot a great deal, especially in standing. Because he believes he must shoot a lot, he does. If he didn't believe it so strongly, he might not need so much.

I think the best I've ever seen Margaret shoot is when she didn't shoot between June and October. She thought she was in horrible condition, but she set a new world record standing, with a bad sight. Dave, would you subscribe to this? You've been through both?

DK: When I left the unit, I could only train a couple nights a week and say a day on the weekend. When I shot the 1967 Pan Am tryouts, my average was up ten points. I got my head together better. I settled things down in my mind.

BP: The point I think we're making is that once you have achieved a certain level, whether it's world class or whatever, that you don't need the training from that point on that you needed to reach that level. You'll also experience another phenomenon after some years of shooting. You'll go along shooting fairly low scores and all of a sudden you'll jump from 1140 to 1160. You don't know why because you aren't aware you are doing anything different. But you are. You're beginning to think, and for the first time.

Wigger got out of the Army then came back to the MTU in October of 1963. He'd only been back a month when I took him to a match where he had an 1139, the best he'd ever shot in his life. In less than a year, two days before the match in Tokyo, he shot an 1170. He won the 1964 Olympics with an 1164. That's quite a jump. Yet he had rocked along for four years and had never broken an 1139. In seven months he was shooting an 1170. He did nothing mechanically different. How well you think is in direct proportion to how well you shoot. The guy who has the prettiest position won't necessarily be the winner.

Mr. Alves: Is there such a thing as overtraining?

BP: Oh yes. Overtraining to the point that you can't concentrate, so you don't really care if you're shooting or not. You become stale. When this occurs, I have an individual put his guns up for a week. You need to be a little bit hungry. The amount varies by individual. Writer may need two hundred to three hundred shots a day standing. If Dave shot that many he would just be putting shots downrange. He would get stale. He wouldn't be working on each shot. This is a worthless way to shoot. It teaches bad habits.

Mr. Rennie: In your book you talk about training the subconscious by a shooter being able to explain to the coach what happens when he shoots the shot. Why?

BP: The reason for this is to reinforce your learning. For example, if you are reading a newspaper you have trouble remembering verbatim what is in that newspaper. If you read it out loud to someone, verbalize it, you'll find you are more likely to remember exactly what was in that newspaper. During your training phases, I think that you should verbalize every act that you do. This helps train your

awareness of your subconscious so that you don't interfere with it and allow it to perform. It's simply one technique to help you become more aware of what you are doing.

MB: When you set a goal, like winning a world championship several years in advance, how do you keep from having letdowns as you meet your intermediate training goals.

BP: Your intermediate goals should not be for more than one year at a time, and they are training vehicles only. They are not ends in and of themselves. Don't try to make a four year training program because there are too many variables that will interfere. Set your goal and a score for the 1980 Olympics, but train one year at a time. There are many changes in a one year program.

DK: Well, I may be accused of missing everything today when I ask this question, but how would you recommend that I or anyone in this room train in order to improve one's ability to put oneself in alpha state? I want to be able to shoot ten or fifteen tens standing without blowing it with a six, say. How do you train so that you don't start overcontrolling the subconscious.

BP: It's a difficult question because it varies with individuals. One of the methods to do this is through cybernetics. Keeping your mind on positive feedback, excluding the external interferences. Visualization - standing outside yourself, watching yourself shoot, and see the bullet go through the target. If you find yourself at a point of wanting to take over your subconscious, then you should take a break and get your thinking reorganized again, back to where it was. Your best scores will be shot at a time when you really aren't thinking about anything. You're just letting it happen. That's the state you want to get back in.

I don't mean go talk to somebody and start telling jokes. Really I don't think anyone can concentrate for a period of four or five hours completely. You're talking about controlling your concentration for perhaps twenty seconds at a time even while in alpha state. Permit alpha state, or stated another way, allow deep concentration and your subconscious to do it for you. Margaret comes as close to this as anyone I've ever seen. You can walk up behind the firing line and talk to her and she never knows you're there. There are others you can talk to, even carry on an intelligent conversation with, yet it doesn't interfere with their shooting because they are capable of turning this concentration off and on. I think awareness that there is a subconscious and that we do have a technique to train it by cybernetics or other methods will lead to other techniques that are an improvement over what we know now, just as has happened with all other techniques we've developed. We didn't know exactly what we were doing when we started out to accomplish them, but knowing that there was something there to improve, we found a way to do it. The psychologist can attach a machine to your head to determine when you're in alpha state, but he can't yet tell you how you did it. After you use the machine for awhile you can learn to switch it on and off. You don't know how you are doing it, you don't know why you are doing it, but you can do it at will. I believe through continued training you can learn to do what you want to do. Don't allow your mind to interfere with your subconscious. Your subconscious is what got you there to begin with. You've trained it over a long period of time, you've allowed it to work to get you there for fifteen shots, then begin working to train your mind to leave it alone to finish. I think you can because you trained it to get you there.

DK: There are days when I shot a ten and start seeing a hundred.

BP: You are going to have to start shooting one shot matches. This is an extremely valuable technique.

Mrs. Proffitt: This is the first time I've come to a match with my daughter, my husband usually comes. I've noticed a whole spectrum of parental attitudes. I put my daughter on the line, go away and leave her. Some parents stay right there. When you're coaching do you stay right behind your shooters in a match, does that give them confidence, does it bother them, what's the best attitude to take?

BP: A great deal depends on the rapport that you have with the individual. In my own case with my children, none of them ever shot. My son tried it a time or two, realized how much work it was and he quit. In complete candor, I think one of the worst enemies a kid has on a firing line is his parents. If they would get away from him and let him alone, he would probably do a great deal better. In my case, in working with individual shooters, it takes a great deal of time and effort to build the rapport with a shooter so necessary which will permit you an exchange of complete confidence. He knows that he can completely trust you and you know that you can completely trust everything he tells you and that he will tell you everything, that he won't withhold anything and that he won't exaggerate. In the case where you have this kind of rapport, you can get behind an individual and stay with them. In the case where you don't have this kind of rapport, you're better off staying away from them. At a world championship I was working with some of our top shooters on the line. We'd been working about two hours and I had an Englishman come up and say, "May I interrupt you for a moment. I've watched you for an hour now working with these chaps. When one of these chaps shoots an eight and tells you it wasn't supposed to be an eight, you believe him, don't you?" I said, "You better believe I believe him. The day I don't, I'm out of business." You must completely trust this individual and he must completely trust you. It takes a lot of time to build this rapport. It's only the individual who can be completely honest with his coach and honest with himself that is going to succeed. The one who misrepresents isn't going to stay around.

AM: On my team most shooters aren't honest with themselves. I've found my diary is one way to combat this. You start to be more honest on paper and become more honest with yourself. It's very difficult to be objective about your performance.

BP: Yes, that's true. You want to rationalize. You must also maintain a credibility with a shooter. You can't at any time place a shooter in a position of ridicule. Since I'm out of coaching now, I can tell this and it is only told to emphasis a point. Gary Anderson in 1968 was shooting prone at 300 meters. He had a 100, then a 94. He walked back and handed me his rifle and said, "See what you can do with this" The armorer and I took it back, went over it carefully and couldn't find anything. We put it back together, checked the sights and the front sight aperture was loose. I tightened it, took it back to him and said it will shoot now. He had a 99, then another 100-7x. After the match, he wanted to know what was wrong with it. He couldn't believe it. Impossible. After the match he had a press conference. I always avoid these things. He insisted I go with him because he knew the question would come up. We had about 75 reporters and

they asked a number of questions which he fielded very well. One finally asked, "I saw you give your rifle to your coach. What did he do to it." Gary turned to me and said, "You tell them" Now there was no way I was going to tell the world press that the gold medal winner didn't have enough composure to tighten his front sight. So I said, "Well, these rifles are highly tuned like a fine musical instrument and about all you can do is to take it apart, look it over, sprinkle it with holy water, say a couple of Hail Mary's and give it back." If I had embarrassed Gary over this incident, all the rapport I had built up with him over a long period of time would have been lost.

MA: Thank you, Colonel Pullum.