

THE PSYCHOLOGICAL EFFECTS OF MARTIAL ARTS TRAINING

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INTRODUCTION

The idea that martial arts training will have beneficial psychological effects in the form of better control, discipline, attention, and self-respect is often suggested in local newspaper advertisements as teachers and clubs seek new students. This paper will review the research literature to examine whether any or all of these claims are supported.

What would seem to concern people most about the martial arts is the fighting. Common sense would seem to dictate that learning how to fight should lead to aggressive behaviour, and this is a legitimate concern. The first section of this book will examine some aspects of aggression, which is intimately concerned with the fighting arts.

The second section presents a review of the literature concerning the psychological effects of martial arts while the final section contains some recommendations concerning martial arts and education.

I. AGGRESSION

A benefit of training claimed by the fighting arts, from Tai Chi to boxing, and by many sports, is the seemingly paradoxical reduction of aggression in their participants. Since even those psychologists who study aggression have difficulty defining what it is, this section offers several conceptual scales which can be used as tools when considering the topic. Many of the other psychological effects claimed for the fighting arts, such as a reduction in fear and increased self-esteem, are also considered in the following.

After these scales have been introduced and explained, several possible mechanisms by which the fighting arts may influence them will be discussed. As the papers are reviewed these potential mechanisms will then be examined in light of current research findings.

SOURCES OF AGGRESSION

We will leave the strict definition of aggression for the moment, and first consider the ultimate source of aggressive behavior. The roots of aggression are usually considered in the context of the "nature vs. nurture" discussion which contains two basic, seemingly conflicting assumptions. The "nature" camp believes that aggression is rooted in man's animal past as an innate, perhaps instinctive response to the world. The "nurture" camp rejects this view and instead begins with the assumption that man is a "blank slate" a tabula rasa upon which society and the environment writes the aggressive behavior according to what is learned. These two theoretical assumptions are the opposite ends of our root scale. The gradations within the scale tend to be where most researchers place the causes of aggression. Like the mind-body split, the nature-nurture split is being repaired in the cause of a more complete understanding.

NATURE VS NURTURE

NATURE

man the animal

NURTURE

tabula rasa

A

B

C

D

At point A, man has instincts which determine that he will be aggressive. The "drive" to aggress is innate and biological, therefore inevitable. In many cases, this drive is assumed to be something that builds constantly until it is released or explodes.

At point B, man can modify his aggressive behavior but it is still innate and latent. There is a certain feeling that aggression must be released in some way but the method of expression can be selected.

At point C, man is seen as having the biological capacity for aggression, but aggressive behaviours are learned. We have feet, fists, teeth, and perhaps a certain urge for self-preservation, but we learn how to use these tools by observing our fellow humans.

Finally, at point D, the idea of a biological basis for aggression is rejected, and aggressive behaviors are strictly learned. This "societal determinism" is every bit as inevitable and deterministic as is the "biological fate" of point A.

Again, points A and D are derived from theoretical approaches while most experimental discussions tend to fall somewhere along the line between them.

Russel Geen (1990) gives a model for aggressive behavior which depends on background factors and immediate eliciting factors which combine to raise the likelihood of an aggressive act. Inhibiting factors can then come into play to modify or eliminate the aggressive impulse. Some of these background factors include genetic makeup, sex, and personality (presumably the more permanent portions of our learned behavior) while the immediate elicitors include stress levels, general arousal, frustration or attack. Inhibitors and modifiers include such things as fear of punishment or retaliation, and judgments of the other person's intention when that person acted. Geen points out that the strictly biological or the strictly learning-based explanations of aggression are really just excuses. "It was my hormones" or "It was my bad childhood" are both simply excuses which remove the responsibility for the actions from the actor.

Karl (1991) also states that the idea of aggression as instinct is simply an excuse for evil and there is in fact no "beast within".

Groebel and Hinde (1989) present a justification for the Seville Statement on Violence, a declaration by several scientists in 1986. The statement claims that it is scientifically incorrect to say that we have inherited a tendency to make war from our animal ancestors; that war or any other violent behavior is genetically programmed into our human nature; that there has been an evolutionary selection for aggressive behavior more than for any other kind of behavior; that humans have a 'violent brain'; and that war is caused by 'instinct' or any single motivation. This statement might be taken as some type of proof that the biological argument for aggression is wrong, but in fact the authors recognize that it is our biological bodies that determine what types of aggression we can undertake. This statement does not, by any means, belong on the extreme right hand side of our scale above.

Another book, edited by Silverberg and Gray (1991) and reviewed by Pellis (1993), takes exception to the Seville Statement and argues that it does not represent any kind of scientific consensus on the role of biology in human violence, in fact it simply promotes the split between biological and social sciences. Pellis points out that ignoring the biological bias in learning, whereby some things tend to be easier to learn than others, would simply be ignoring reality. The situation in the former Yugoslavia is given by Pellis as an example of the failure of two generations of education in ethnic cooperation within a period of months. Surely the children who grew up learning cooperation could not have 'learned' to perform such barbaric atrocities within such a short time without some sort of biological predisposition toward aggression. This predisposition however, does not mean that there is a biological determinism.

Two theories on aggression which we encounter in the literature are those of "cathartic" and "circular" aggression. The catharsis theory views aggression as something like an instinct or drive which builds, rather like the water behind a dam. In order for the water not to get so high as to burst the dam and cause considerable damage, it must be "bled off" by controlled spillways. Aggression can be "bled off" by violent sport or other situations of controlled violence. This view of aggression would fall somewhere between points A and B on our scale above. The circular theory of aggression is well defined by the axiom "violence begets violence" and simply states that aggressive actions provoke more aggressive actions which in turn cause the original perpetrator to aggress further. This theory would fall more toward the right hand end of the scale, between points C and D as aggression is "learned" and used.

DEFINITIONS OF AGGRESSION

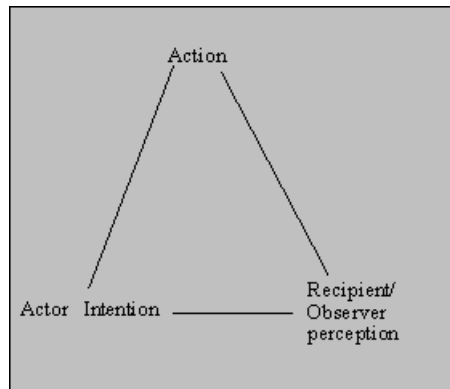
Karl (1991) points out that even something as clear-cut as killing another man can have radically different interpretations. A man is accused of a "cowardly attack" if he kills another during a robbery, but is praised for a "courageous deed" if he kills a guard while escaping from a prisoner of war camp. While it is fairly certain that most people would suggest that aggression has occurred in both cases, the degree of justification and approval differs. It might be suggested that when an act is justified, it is less aggressive than one that is unjustified.

Groebel and Hinde (1989) define aggression as an interaction between two individuals. "Attack on another individual usually involves risk of injury for the attacker. It is therefore rarely single-minded, but is associated with self-protective and withdrawal responses." (p.4) Other authors have suggested that aggression may be directed toward inanimate objects as well. Aggression may be of several types. Instrumental aggression is goal oriented and occurs during theft or war. This may also be called felonious aggression. Hostile or teasing aggression, or emotional aggression is directed toward another and harm is intended. Defensive aggression occurs when one is attacked or provoked. Games aggression occurs when one deliberately tries to injure someone during a sporting venture. Dyssocial aggression is associated with gang behavior, and bizarre aggression is due to psychopathic behavior. Violence is defined by these authors as physical but not psychological damage to a person or object.

These various attempts to classify aggression point out the variety of opinions that can be expressed on the subject. Almost every author and researcher will have an idea as to what aggression and violence is, and we now present several scales which may help locate a particular definition. No one of these scales will suffice of itself, to define an aggressive action. Each scale may also be affected by other scales and these compound effects may make precise definitions of aggression or violence most difficult.

AGGRESSION SCALES

Three major aspects of aggressive behavior are generally used to define it. The action itself is a more or less objective factor, while the intent of the actor, and the perception of the recipient or observer are more subjective.



The recipient/observer can see both the action and the actor but must suppose the actor's intent. The actor knows the intent, and acts on the recipient through the action. To a much smaller degree the actor may be able to influence the recipient/observer directly, perhaps by facial expression or other communication apart from the action, and thus consciously influence the recipient/observer's determination of intent.

In addition to these three factors, several other influences can be identified which may affect the judgement of how aggressive is any particular action. In all the scales below, a judgement of greater aggressiveness is presumed for the left side of the scale, while a probable judgement of less aggressiveness is represented to the right.

ACTION

MOST AGGRESSIVE

LEAST AGGRESSIVE

shooting

hitting

boxing

basketball

cards

sitting

sleeping

FAST ACTIONS

SLOW ACTIONS

DELAYED REACTION

IMMEDIATE REACTION

Actions can range from sleeping in bed to shooting and killing someone with a gun. A broad range of actions are possible between these and at some point on the scale, most people will begin to identify the actions as aggressive. It is possible that killing someone with a gun could be considered less aggressive than killing with a knife, (a much more personal act) and it is also possible that in some situations, sleeping in bed (while, for instance, someone else is working hard) might also be considered an aggressive act.

The speed of an action may represent its potentially damaging effect, with a fast swing of a stick at a friend being defined as more aggressive than a slow one.

When responding to an attack, an action may be considered more aggressive when it is delayed in time. It is not usually considered overly aggressive for someone to hit back immediately on being hit, this is simple retaliation or self defence and is done "in the heat of the moment". Hitting someone a week later, however, is likely to be called vengeance or revenge and is likely seen as overly aggressive. This is especially true when considered from a legal viewpoint. This self defence aspect of the scale will be affected by other factors, for instance, by judgements of the aggressiveness of the original attack, the attributes of the retaliator and the effects of the retaliatory action.

The effect of any particular action can often define its aggressive nature. Hitting someone is likely considered a more aggressive act when death or permanent damage results than when no bruises at all occur. Physical actions with visible effects such as bruises are likely to be considered more aggressive than the psychological damage caused by, for instance, taking away a possession. An action with no effect at all, is unlikely to be labeled as highly aggressive.

EFFECT OF ACTION

GREAT DAMAGE MINOR DAMAGE TAKING A TOY NO EFFECT

death permanent injury broken bones bruises pain

The object of the action also influences the judgement of aggressiveness. It is usually not considered aggressive to kick a rock, to kill bacteria or to pull weeds in the garden, but some may consider it aggressive to fell trees, or to kill fish. It is almost possible to draw a graph between the size of the eyes, relative to the face of any mammal and the outrage caused by killing it. Killing a beady eyed mammal like a rat is likely to be considered less aggressive than killing a seal which has big soft eyes. This particular effect is further explored in the psychological distance scale.

Attacking humans is not a single point on the scale, it is likely considered less aggressive for a man to hit a stranger than it is for him to hit his wife or children.

OBJECT OF ACTION

PEOPLE ANIMALS INANIMATE

wife strange man large eyed mammals fish, frogs trees, weeds bacteria, virus rocks

While we suggested it was not an aggressive act to kick a rock, it might well be interpreted as aggression to punch a wall when in the middle of an argument with someone. In this case, a judgement of the intent of the actor is made and the action may be interpreted as a threat of physical violence to come. On the other hand, if the actor is judged to be frustrated rather than angry, the action of punching a wall might instead be interpreted as non-aggressive, and even, as a plea for help. This points out the importance of looking at more than the action in isolation.

INTENT OF ACTOR

Apart from a consideration of "what was done", some idea of "what was intended" is usually needed in order to establish whether an act of aggression occurred. This is especially important in matters of the law, but it also operates at the common sense level of judgement. Perhaps the most basic consideration is whether or not the act was an accident or done "on purpose". A whole range of actions can be imagined which might be interpreted in light of the actor's intent. Purposely jumping on someone is aggressive while tripping and falling on someone is probably not. Dancing wildly and jumping on someone is slightly more aggressive than tripping and falling into them, although falling into someone when drunk is somewhat more so. Hurting someone during a theft is aggressive but hurting someone in self defence is less so. Playing sports is likely to be seen as more aggressive than dancing, especially if an injury occurs.

ACCIDENTAL ACTIONS

AGGRESSIVE

NON-AGGRESSIVE

jumping on
someone

theft

self
defence

drunk
driving

playing
football

jumping
around

fall on
someone

The intent of the actor will perhaps be the major factor in how the actor judges the aggressiveness of his own act. It is also a large, but by no means the only, factor in how the recipient or a third party judges the aggressiveness of any act. It is always more aggressive when the actor "meant it" than when it was an accident, no matter who is looking at the situation. Anyone except the actor however, must look at situational clues to decide what was in the actor's mind at the time of the action. This is the major question at almost any legal trial dealing with assault or other form of aggression. The perception of the recipient is now being considered in "victim impact" statements while third party perceptions are also being allowed in "expert witness" testimony but the question of intent remains paramount. A somewhat special legal case involving the perception of the recipient occurs in cases of self defence where a person is allowed to aggress against another person if attacked, or if the defender believes that an attack is imminent and the defence necessary. In this case, a hypothetical "reasonable person" is introduced to make sure that the defensive act is actually justified. A "reasonable person" should have felt, in that situation, that the defensive actions were necessary. This principle is to prevent over-reactions from being excused.

The fact that in many places the words used in the law are actually "reasonable man" has led some to argue that there should be a difference between what is permitted for a "reasonable man" and for a "reasonable woman" and that women should, due to their more vulnerable situation, be allowed more latitude in their justifiable defensive responses.

One of the ways to establish the intent of the actor is to consider the following.

CLASSES OF AGGRESSION

HOSTILE INSTRUMENTAL DYSSOCIAL DEFENSIVE GAMES BIZARRE

intended
damage

theft/war

football
hooligans

fighting back

fouls

"madmen"

Using the classification provided by Groebel and Hinde (1989), we can construct an intent scale such as this one. Deliberately seeking to hurt someone "for no reason" while in one's right mind is likely seen as extremely hostile. If the actor hurts someone during a robbery, the damage may be the same or greater but there was likely no intent to do the damage. The aggression may be seen as less serious in this case. Similarly, running with a youth gang may be seen as giving one less responsibility for the aggression. This reasoning is more easily seen if one considers mob aggression in the crowd at a sporting action. Hurting someone during a crowd melee is likely to be thought less aggressive than hurting someone in the relative calm of a living room. Causing injury while defending oneself from attack is certainly not an act which is as aggressive as an unprovoked attack, even if the effect of the action is the same. While hockey or football players who seek to damage their opponents are said to be aggressive, they are not usually deemed as aggressive as a wife-beater or a thief and they are not usually brought before the law. Finally, one who is mentally ill is usually not thought to be aggressive in the same way as is one who is sane. A deranged person is often more to be pitied than condemned as aggressive. This last case may be subject to modification by certain other factors. The various political and social forces at work in our society may affect the judgement of how "crazy" a killer is, and of how aggressive his or her acts. This judgement may be made independently of any medical pronouncements on the mental state of the actors.

There is often a fine line between whether one is being aggressive or simply assertive. Speaking up, speaking up and poking a finger into someone's chest, and simply poking a finger into someone's chest are likely points along the assertion-aggression scale. A wide range of judgements can be made about the same action (poking a finger) depending on what the actor is saying or otherwise communicating at the time of the action.

AGGRESSION VS ASSERTION

AGGRESSION

ASSERTION

hitting with fist

poking with finger

poking and
complaining

poking and
explaining

explaining

Along with the intent of the actor we must consider the various physical characteristics of the actor since these will almost always influence judgements of aggressiveness. A large, poorly dressed, unshaven male is often seen as inherently more aggressive than a small female child regardless of intent or the actual effects of an action. Questions of race and religion also enter into this scale. There will always be some groups that feel other groups are aggressive, simply by being other groups. This aspect may be treated more thoroughly in the power balance scale as it involves both the actor and the recipient or observer.

ACTOR CHARACTERISTICS

MEN

WOMEN

BOYS

GIRLS

"the other"

"those like us"

"us"

Those who are most like "us" are often given "the benefit of the doubt" while those outside the group are judged a lot more quickly.

We have not attempted to provide scales for the "reasons why" an actor acts. These have been discussed in the previous section, and in several of the scales given here, one can perceive potential reasons for acting, as for instance, in cases of self defence.

PERCEPTION OF RECIPIENT OR OBSERVER

The final third of the triad to be considered in the judgement of aggressiveness is the perception of the recipient of the action. Also to be considered in this section is the perception of an observer or third party. One or the other of these parties are the ones likely to call an act "aggression" since the actor is not likely to define any personal acts as being unjustified or unreasonable (ie. "aggressive"). Most people would never call their physical attacks on another unprovoked, there will always be some form of perceived attack to which the actor is responding in self defence.

There is an important distinction to be made between the recipient of the action and the third party. It is a common finding in studies on sexual assault that those women who meet the experimenter's definitions of having been "raped", will deny it. While there seems to be no difference of opinion as to what action occurred, there is a difference in the interpretation of the meaning of that action. As a result, it is now common practice for experimenters to ask questions such as "have you ever experienced forced or attempted forced sexual intercourse against your will?" and to define this as rape or attempted rape when reporting the results of the study (see Lori Haskell and Melanie Randall, Toronto Globe and Mail Sept 9/ 1993 for an example of this type of study). One reason for this difference of opinion could simply be that experimenters are looking only at the action itself while the recipients are looking at both the intent of the actor and at their own perceptions of the action.

RECIPIENT SCALES:

Perhaps one of our best clues as to whether we are being aggressed against is the "fight or flight" response. This is the familiar churning sensation that we feel in the stomach and is a biological reaction to many environmental cues, most of which would indicate some danger to the organism. As a learning animal, man can modify this "gut reaction" and even eliminate it in situations where danger is known to exist. This is a very important concept in most systems of fighting and is called variously, a cool head, grace under fire, and in Japanese, fudoshin or immovable mind. The opposite of this would be panic or a frozen mind (fushin in Japanese). If one is exposed to a certain action and one does not experience this gut reaction, one might be less likely to label it an aggressive act. On the other hand, if one is stressed and anxious, a rather innocent action might trigger the physiological reaction and one may call the action aggressive.

ALARM REACTION

CALM MIND

panic

anxiety

physical
anticipation

calm

stress

PARTICIPATION

The degree to which the recipient is involved in the action or in the events leading up to the action can influence the definition of aggression. If one is struck when taking a massage, or playing a contact sport it is not likely to be called aggression. If one is struck while standing on the sidelines of a football game it is also not likely to be called aggression but if one is struck from behind when walking down the street, even if accidentally, it is likely to be thought of as an aggressive act. The closer or more linked one is to the action, the less likely one is to define that action as aggression. There is a large component of anticipation and preparation in this scale, what we expect, doesn't alarm or shock us as much as what we do not expect.

RECIPIENT INVOLVEMENT

PASSERBY

SPECTATOR/BYSTANDER

PARTICIPANT

unprepared

somewhat prepared

prepared

no responsibility

some responsibility

fully responsible

The more involved one is with an activity, the more responsibility one takes for the possible outcomes. This is likely why a spectator at a hockey match who is hit with a puck will usually not attempt to sue. When they do attempt such a thing, there is often a legal scale of responsibility which includes taking certain risks upon oneself at a sporting match. The same mechanism is likely occurring to some extent when women who have sex against their will, are more likely to call it rape and report it when the actor is a total stranger, and will not do so when it occurs during a dating situation.

LOCUS OF CONTROL

The way in which one views one's place in the world can affect one's judgement of acts. A person with an external locus of control, someone who believes themselves to be largely powerless in the face of external events, will likely see many actions as being aggressive. After all the world is acting on the individual and the individual has little control over those actions. At the other end of the scale is the internal locus of control. A person who believes that they have the power to influence the environment around themselves is also less likely to judge actions as being aggressive, believing that they can influence them, and even, perhaps, have some responsibility for them.

COPING METHOD

EXTERNAL

INTERNAL

no control of environment

master of own fate

acted on

acts upon

SELF CONFIDENCE

Closely associated with locus of control, is the concept of perceived self efficacy, the belief that one has the skills to influence the external environment and that one can do it. This is often loosely termed self confidence and this aspect of personality tends to be highly situation specific, as opposed to the locus of control which is more of a method of looking at the world. If one believes one has the skills to deal with a certain action, then the fear and anxiety provoked by that action are reduced which could lead to the action being judged less aggressive. To look at this another way, if one has low perceived self-efficacy than even an innocent act may be interpreted as aggressive out of fear caused by the lack of coping skills.

PERCEIVED SELF EFFICACY

LOW SELF EFFICACY

HIGH SELF EFFICACY

can't cope

have coping skills

It is likely that learning fighting skills would have a large effect on perceived self efficacy.

Certain physical factors such as noise and light may act as general irritants and increase judgements of aggressiveness. In the same way, conditions of mental stress such as anxiety, sexual or emotional arousal or excitation might act as amplifiers of any judgements made. Depression or other conditions which would reduce the mental or physical responsiveness would also tend to reduce judgements of aggression.

STRESS LEVELS

HIGH

LOW

stimulating environment

quiet environment

physical excitation

sickness

mental excitation

depression

The pre-existing beliefs of a person can affect the judgement of an aggressive act. If a person believes "all men are rapists" or that "all feminists are castrating lesbians" or that "gang members are violent" than one can become either fearful of, or outraged at these groups (depending perhaps, on whether one has an external or internal locus of control). These prejudicial views may cause one to make an immediate judgement of aggression which might not be made by someone with a more open mind who might look at several other factors before judging.

PERSONAL BIAS

HIGH BIAS

FLEXIBLE

opinionated

open minded

fearful

trusting

outraged

understanding

THIRD PARTY SCALES

Third party judgements of aggression are becoming more important in a society that is considering such things as third party reporting of harassment in the workplace. It may be extremely difficult for a third party to come to the same conclusion in any situation as either the actor or the recipient. We have already mentioned the difficulty interviewers have getting women to define themselves as having been "raped". Police also experience difficulty in assessing aggressive situations as they often must consider the action in isolation from intent and perception. Misreading the situation from limited information is quite likely why police are sometimes attacked by both parties when trying to intervene in a domestic dispute.

These scales are included with the recipient scales simply because both observer and recipient must use many of the same cues regarding the action and the actor's intent when forming an opinion of whether an act is aggressive or not. A third party observer will also be influenced by the factors mentioned above for the recipient but only as they apply to the observer, since a third party can know nothing of the thought processes of the others. A third party may, however, use his own mental processing as a reference more or less in relationship to how similar he believes the recipient to be to himself. This closeness will be affected by personal distance, the source of information about the action, and the psychological distance from the recipient.

PERSONAL DISTANCE

NEARBY

DISTANCED

me

my family

my friends

strangers

in town

somewhere else

If the action happens to "me", the observer is of course, the recipient. The observer will be affected in judgements of aggressiveness depending on how close the recipient is in the kinship or social

group. Harsher judgements will be made as the recipient gets closer in relationship to the observer.

INFORMATION SOURCE

NEARBY

DISTANCED

personal
information

personal
communication

television

radio

newspapers

The way in which information about a situation is received may influence the observer's judgement. Seeing an action will likely lead to the harshest judgement of aggressiveness, while being told about it personally should also result in judgements of high aggression. Television is a medium which involves both sight and sound cues, while radio uses only sound. Both of these media are more "personal" and perhaps visceral than the rather intellectual exercise of reading about an action in the newspaper.

We have mentioned the aspects of similarity in previous scales. An observer is likely to be more harsh in the judgement of aggression when watching an action against a recipient judged as similar, than against one who is dissimilar to that third person. When considering a stranger, such aspects as sex and race will likely give strong cues as to similarity, while social aspects such as education and class should give less information and simply being in a situation similar to one the observer has been in should give even fewer cues as to similarity.

Third parties will also receive similarity cues in diminishing strength as the recipient characteristics get further from being human. Large eyed mammals look more like human children than do beady eyed rats, while plants, bacteria and rocks are not likely to remind anyone of anybody they know and are thus not likely to arouse much sympathy.

PSYCHOLOGICAL DISTANCE (THIRD PERSON)

SIMILAR TO ME

NOT SIMILAR

sex

race

nationality

education

economic class

situation

humans

cute animals

ugly animals

bugs

plants

rocks

OTHER CONSIDERATIONS

When looking at a situation which is potentially aggressive, one thing that will likely be assessed is the relative power of the two parties. If the actor is judged more powerful than the recipient, any specific action is likely to be seen as more aggressive than if the power balance is tipped the other way. These power imbalances are not as clearly defined as they might at first appear. A case in point is the balance between black and white people. If the recipient or observer is afraid of blacks, then the greater power may be seen to be in their hands rather than in the hands of the whites, in which case the scale below would be reversed. Similar arguments can be made in the case of male and female, depending on the situation and on what is being defined as "power" in that situation. In the case of a child and an adult, the perceived power balance is likely to be as shown, as is the case of several actors and one recipient.

POWER BALANCE

STRENGTH TOWARD ACTOR

BALANCE

STRENGTH TOWARD
RECIPIENT

male vs female

female vs male

white vs black

same qualities

black vs white

adult vs child

child vs adult

many attackers

same numbers

one vs several

There will always be an effect of the social sanction of violence or aggression on an individual's judgement. The most obvious source of information on how a society defines aggression is through the legal system. The particular situation in which a society exists at the time of the action will also affect the judgement of aggression. Acts that are tolerated and even seen as necessary during wartime, such as the internment of groups of people, may be labeled aggression during peacetime. State sponsored acts in some dictatorships may not be seen as aggression by the advantaged classes, while being labeled as such in more democratic societies. Some acts are also more likely to be labeled aggressive in relatively classless societies than in ones that are highly structured, especially when the acts are performed across classes. Finally, it is usually not considered aggressive for the state to execute an individual while it is always aggressive if an individual performs the same act.

SOCIAL SANCTION

LOW SANCTION

HIGH SANCTION

peacetime

terrorist threat

wartime

free society

pseudo-freedom

dictatorship

egalitarian

pseudo-classes

class system

individuals

vigilantes

state

Finally, an act performed in the imagination with a war toy is not likely to be considered as aggressive as when the exact same act is performed with the real thing during wartime.

REALITY QUOTIENT

PHYSICAL
REALITY

IMAGINATION

warfare

war toys

movies/theatre

storybooks

daydreams

The "reasonable person" used during self defence considerations at law could be seen as another form of "reality quotient" when dealing with aggression. Shooting the letter carrier because of a fear of uniforms is not likely to be seen as a "reasonable" action and will not be judged as self defence.

THE INFLUENCE OF FIGHTING ARTS ON AGGRESSION

Some of the possible ways in which fighting arts could influence the various aggression factors noted above should be mentioned before we consider what has been reported so far in the literature.

SOURCES OF AGGRESSION

If aggression is an innate, unchangeable, biological fate, than learning a fighting art will have no affect on aggressive behavior at all. The more one accepts that aggression can be learned, the more one must also accept that aggression can be modified by learning. The relevant question then becomes 'what affect does learning to fight have on aggression'. The acquisition of a set of behaviors that have the potential to damage another person may or may not increase the likelihood that those behaviors will be used. If the catharsis theory of aggression is correct, than controlled aggressive behaviors such as boxing or wrestling should reduce aggression outside the ring. If the circular theory is correct, than learning a fighting art should create more aggressive behavior.

If the fighting system studied also teaches things such as cooperation with a partner or the rest of the class, control of emotions, control of actions, and personal responsibility for actions, then it is possible that aggression may be reduced in the student. Another consideration which must be answered by research is the speed with which aggressive behavior can be modified by education. Will a short course in boxing or Aikido change one's behavior one way or another, or does this type of education require years to modify the habits of a lifetime? Many authors suggest that the fighting arts, and other arts such as yoga, promote an integration of the brain and the body, to develop a "bodymind". Does this integration of the rational mind, (which may represent nurture or learning), with the body, (representing nature or biology), have an effect on aggressive or other behaviors?

If we use Geen's (1990) model of aggression we can consider what effect learning the fighting arts has on the background factors, the immediate elicitors and the modifying, external factors. It is unlikely that fighting arts will have an effect on race or sex but they may have an effect on gender orientation, on how "masculine or feminine" one is as judged by various psychological measures of these things. Do the fighting arts have an effect on "machismo"? It is also possible that the fighting arts may affect the long term or stable "personality" of students. A more likely place to examine the effects of learning to fight, would be on the immediate elicitors to aggression. It is quite possible that effects might be seen on such items as stress levels, general arousal, frustration, fear and the perception of being attacked. It is also possible that learning fighting skills may affect the inhibiting factors to aggressive acts, possibly by removing fears of retaliation. For instance, the aggressor may gain increased confidence that the person attacked cannot match the fighting skills learned, and so be more likely to attack. The various substituant factors involved in aggressive acts may also show changes through training in fighting arts.

ACTION SCALES

The particular aggressive acts performed, will not of course be changed by learning a fighting art. A

punch will remain a punch, but it is possible that persons trained in the fighting arts may be able to very rapidly change from one action to another. This fine motor skill could convert a punch to a push even when only a few inches from contact. The actor may also be able to modify the speed of the action, the effect of the action and thus, even the perceived intent of the action. These near-immediate changes will depend of course on the actor changing his mind and wanting to change from one act to another.

Training in fighting arts, with their emphasis on fast reaction time, is likely to make any retaliatory act immediate rather than delayed, thus reducing the chance of judgements that the action was "revenge" rather than self defence. The influence of the timing of retaliatory acts has become more important in recent years as lawyers have begun to use ideas such as "battered wife syndrome" to argue self defence in cases where a woman kills or maims her partner when she is under no apparent immediate physical danger or threat. As mentioned before, the fine muscle control which is presumably gained when learning a fighting art would allow an actor to control the amount of damage inflicted by any particular act. This control would reduce the likelihood that any act would have an effect that is not intended by the actor, presumably reducing doubt about the aggression of the actor. On the other hand, if the fighting art was taught in such a way that the student had no idea of what type of damage he or she was capable of inflicting, the possibility exists that the effect of an action would be out of proportion to the intended damage. Such a situation might occur with throwing arts such as wrestling, judo or aikido. Partners thrown in class know how to fall without damage while an untrained person thrown in exactly the same way could be injured severely. In all cases, however, it is quite probable that the effect of an act intended to cause harm, would be more damaging from a trained person than from one not trained in a fighting art.

The object of the action is not likely to be changed during the enactment of a potentially aggressive act, but the choice of object might be influenced, as, perhaps when a wall or door is struck instead of a person. It is hard to see, however, how fighting arts might influence this choice except through the practice (habit) of striking inanimate objects in arts like karate. Perhaps by knowing how to strike inanimate objects without injury, the likelihood of striking them rather than the desired (or eliciting) target might increase.

INTENT OF ACTOR

It is possible that learning a fighting art could modify the intent or at least the apparent intent of the actor. Most fighting systems would train students to be quite careful in their movements, and the more "self-defence oriented" arts would presumably teach vigilance. This could very well mean that the likelihood of an accident is reduced with the extra care taken when moving around. This reduction in accidents would mean that any particular action would more likely be interpreted as intentional. If the actor is not "accident-prone" but is seen as being under good self control, then it is less likely that any particular act would be judged an accident.

When considering the several "classes" of aggression, it is likely that learning self defence oriented arts would change the likelihood of "defensive aggression", probably by increasing it. Hostile, instrumental and dyssocial aggression might be affected if the art included ethical training in its curriculum but it is hard to see how the likelihood of performing these aggressive acts would be affected directly by simply learning how to fight. Similarly, aggression which occurs during a game might be affected by ethical training (in, for instance, agonistic type fighting arts) but might not be affected by learning the physical techniques themselves. The likelihood of psychopathic aggression is not likely to be affected by learning a fighting art unless these arts can be shown to have therapeutic value for this type of mental aberration. On the question of aggression vs assertion, it is likely that a fighting art that teaches self-control would make it unlikely that an assertive act would be misinterpreted as aggressive. Training in fighting could give a good appreciation for "personal space" and threat behaviors and so might reduce the likelihood of an erroneous retaliatory act such

as punching the bank clerk who insists on getting another signature for something or other.

While it is not possible for any training to change the characteristics of race, sex or other physical trait in an actor, it is possible that the actor might be trained to a wider appreciation of who is "like us" and who is "different". Many fighting systems are products of foreign cultures that retain much of their original flavour. Training in these arts might widen one's "family" to include those of other cultures and/or races.

PERCEPTION OF RECIPIENT OR OBSERVER

When looking at the scales involved with the perception of the recipient, we must examine the effects of training in fighting arts on how the trained person views actions received, with regard to both the judgement of aggression and on the likelihood of retaliation to a perceived attack. Training in fighting arts may also affect the judgement of a third party observer.

If a fighting art promotes the control of the alarm response, giving a "cool head", then the physiological cues which might indicate an aggressive attack will be absent from many situations. On the other hand, a fighting art that emphasizes getting "psyched" for a competitive, sporting match, could well provide trained cues to trigger the physiological response which then might be tripped by the actor, leading to a more severe judgement of aggression.

It is unlikely that training in a fighting art will affect a judgement of the degree of participation in any particular act, but it may affect the assumption of personal responsibility for that particular degree of participation. Training that emphasizes the personal responsibility of each student for their own safety and their own avoidance of conflict, could very well lead to a student assuming that an act was in part "my own fault for being there" and lead to a judgement of reduced responsibility and aggression from the actor.

It is uncertain whether the locus of control can be changed with education, or how easily that could be done, but it is highly likely that the perceived self efficacy of a student of the fighting arts will be changed by that training. It is, after all, the skills to handle physical conflict that are presumably being taught to students. Having the skills to handle a conflict, and having the belief that one can use the skills could perhaps lead to a change in the judgement of aggressiveness through, for example, a lowering of fear levels.

If the training acquired includes such features as breath control and other commonly recognized methods of stress control, then the overall stress of the recipient may be lowered, also lowering the "threshold of aggression judgement".

Any educational experience is likely to open a "closed mind" and training in combat arts is probably no exception. A reduction in prejudgement about the actor's intent or actions will likely lower the chances of an incorrect judgement of aggression.

As was mentioned above, training that includes acculturation to other countries or other ethical systems may reduce the personal distance from the observer to the receiver. This could lead to increased judgements of aggression than might otherwise be the case as, perhaps, a stranger is now regarded as one of the newly widened group or family. When training in a combat art, it may also be easier for an observer to put himself in the place of a receiver of a physical attack. This empathy may overcome the distancing effect of some information sources and reduce the psychological distance between the observer and the receiver, making for harsher judgements of aggression than before the combat training.

On the other hand, combat training may affect the perception of power balances. Those trained in

self defence may well become less sympathetic to recipients of physical actions, thinking "why didn't he defend himself". It is possible that those who have experienced the power of a trained woman might be less likely to accept automatically that women are less powerful than men. It is also possible that the concentration on physical conflict when learning a fighting art may influence judgements on such things as the imbalance of power between persons of different colour. A white and a black man may be judged solely on their physical attributes during a physical altercation, and considerations of historical domination ignored.

Social sanction may be influenced by fighting arts through legal restrictions on exotic weaponry, leading to a public perception that those who use "martial arts weapons" are unusually aggressive. There is also the possibility that a person's training may be taken into account during trials on assault but on the whole, there is little indication that those trained in fighting arts are treated any differently than untrained citizens.

A final, and very important matter which must be considered when examining fighting arts training is their "reality quotient". Is training in boxing "play fighting" or "aggression". There is plenty of evidence that these two things are not the same and should be treated as separate subjects when considering interpersonal relationships.

Michael Boulton (1991) states that not all behaviors that look aggressive are aggressively motivated and separates "rough and tumble" fighting from aggressive fighting. One interesting finding from his research is that 8 and 11 year old children could easily and reliably determine whether or not an act was intended as an aggressive challenge, or an invitation to rough and tumble play. An invitation to rough and tumble was usually met by a response in kind, while acts of aggression were likely to be responded to by an act of aggression or by no reaction at all. The judgement of aggressive behavior in the children was made by the researchers on the basis of the same three major factors proposed above, the characteristics of the action performed (action/outcome), the presence/absence of signs of distress/annoyance of the recipient (perception of recipient), and the presence/absence of signs of regret by the perpetrators of injury/distress (intent of actor). Of special interest in this research was the finding that less than 1% of bouts of rough and tumble play changed directly into aggression.

This last point is important to remember when examining the psychological effects of training in the fighting arts since it could easily be assumed that what is being practiced in the classroom is the same as what occurs in the back alleyway. If this were indeed the case, and if it is accepted that aggression breeds aggression or violence breeds violence, than learning the fighting arts should produce aggressive students. If, however, what is happening in combat training is "rough and tumble play", than it may have little to do with aggressive behavior at all.

In the next section we will examine the scholarly literature for evidence of any psychological effects of the fighting arts on the students.

PSYCHOLOGICAL EFFECTS OF COMBAT ARTS, PART II

DOES THE BODY AFFECT THE MIND?

There is little doubt any longer that the body has a great influence on the mind, and that participation in sports can affect mood if not behavior.

Berger and Owen (1988) investigated the effects of swimming, body conditioning (weight lifting and running), hatha yoga (an eastern, non-martial art) and fencing (a non-eastern combat art) on stress reduction. The components of exercise which were thought to best facilitate psychological benefits, especially stress reduction, included:

1. an aerobic component,
2. a non-competitive aspect, (competition was assumed to be inherently stressful)
3. predictable elements, (so that the exerciser can tune out the environment), and
4. a rhythmical nature (again to encourage the mind to wander).

The last two aspects were thought to provide a "time out", which would, in itself, reduce stress. For instance, just sitting in a chair and relaxing reduces stress. Anxiety and depression both decline when the subject is engaged in hobbies and in exercise. In contrast, anger and fatigue are decreased only with exercise.

Other factors involved in physical activities which reduce stress include:

1. frequency, (benefits from exercise are usually short term so one must exercise regularly)
2. intensity (moderate, not mild or intense) and
3. duration (at least 20 to 30 minutes, with 60 being better).

The activity should also be pleasing and enjoyable since one is not likely to exercise if it is distasteful, and doing something one doesn't like is not usually relaxing.

In the study, no long term effects (from the beginning to the end of a 14 week semester) were noted, but low intensity exercise was found to improve mood during the class, as did high intensity exercise. Swimming has been associated with short term increases in vigor, and decreases in confusion, stress and anger. Contrary to expectations, swimming showed little effect on the subjects in this study, but the authors note that the swimmers were in a good mood before their exercise period began, thus masking any mood improvements.

Body conditioning exercise served to increase feelings of fatigue, with no other mood effects. The authors speculate that this may have been due to the stress being intense and not moderate, and the running being interval training, a series of short, fast runs at 90% of maximal heart rate, rather than a long slow run (LSR) type. In other tests weight lifting was shown to enhance self concept and lower stress. Running (LSR) has been well documented as a method of stress relief.

Information on the effects of breath control, and relaxation, especially as practiced in hatha yoga, is sparse. There are indications that the right and left nasal air passages are linked with right and left hemisphere activity. Breathing is also used in chronic pain control methods. The study showed that yoga was, from the first class, a good method of reducing stress, so it would seem that there is no need for long practice of the skills before seeing the benefits. Yoga teaches breathing awareness,

self regulation, conscious relaxation of muscles, and an internal awareness, skills common to many stress reduction programs. Abdominal breathing has been associated with regulation of the autonomic nervous system while shallow thoracic breathing is associated with stress. The researchers assumed that fencing would have no effects at all since it satisfied none of the main criteria for stress reduction. In fact few effects were seen but students did show more vigor after their classes.

The authors concluded that exercise which encourages abdominal breathing, is noncompetitive, predictable, and rhythmical is stress reducing.

THE PSYCHOLOGICAL EFFECTS OF COMBAT ARTS

Kroll (1967) gives 4 possible links between psychology and sport:

- 1. Personality factors may cause individuals to select and participate in a sport. People will choose the sports that most suits their personality.
 - In this case, beginners and advanced students will show similar personalities.
- 2. There may be no pattern for entry to a sport but either personality changes or attrition of non-desirable pattern types means that those with suitable psychologies remain and are successful. Choosing a sport may be random but the sport may either change your personality, or only those with suitable personalities will remain after a certain time.
 - Beginners will not show a similar personality pattern but advanced students will.
- 3. There may be no connection at all, no discrimination. The choice of a sport is random, and the sport may not have any effect at all.
 - Neither beginners nor advanced students will show any pattern in their personalities.
- 4. Those entering a sport may show a similar pattern but changes and attrition may cause the pattern to become non-discriminating. People may choose a sport that suits their personality but changes and dropouts will be random.
 - In this case, beginners will show a similar pattern of personality but advanced students will not.

Kroll studied collegiate wrestlers who were of superior, excellent or average skill. All wrestlers were scored on Form A of the Cattell Sixteen Personality Factor Questionnaire (16PF test) which is based on factor analytic research and purports to measure all the main and separate dimensions of personality demonstrated as factors capable of differentiating people. The wrestlers were different from population norms, being more tough minded, self reliant and masculine. In this study, the wrestlers were not more neurotic as was previously reported. No differences in personality were found between wrestlers of different skill levels.

THE PSYCHOLOGICAL EFFECTS OF MARTIAL ARTS

Cox (1993) reviewed the literature on the martial arts, giving an overview of the personality traits of martial artists, the role of imagery in training, the biomechanics of karate techniques, fitness attributes of martial artists, and the application of martial arts training to the physically challenged, and as clinical aids to therapy. He concluded that the common image of the martial artist portrayed in the movies does not fit the actual profile. Martial artists do not start their studies as more aggressive than the average person, and become less so as they continue their study. They may also become less anxious, more self-confident and have higher self-esteem as a result of their studies.

Kroll and Carlson (1967) noted that combat sports may provide a chance to display prowess or

masculinity, to develop self confidence, release tension and sublimate aggression. Karate is suggested as having several advantages as a combat physical education system in that a) women can participate, b) as a method of self-defence karate may be considered superior to amateur boxing or wrestling, c) karate effectively develops certain muscular strengths and d) the emphasis on wholesome character attributes and etiquette rituals is desirable in attempts at amoralization of asocial tendencies.

The authors studied karate students from several different clubs, defining a senior as having more than 1 year experience, an intermediate as more than 6 months and a beginner as less than 6 months. The 16 PF test showed no differences between beginners and advanced students, or with the normal population. Since the researchers used several different clubs and defined seniors as having one year or more of experience, there may not have been any differences to see due to their almost uniform inexperience. The wrestlers in Kroll's other study (Kroll 1967) would all have had many years of training and also showed no differences. If differences are slow in developing, the wrestlers would show differences (as they did) from the population norm while the karate students might not.

Fragar (1969) analyzed the psychological makeup of the Japanese Samurai for Psychology Today magazine. His initial case study was Musashi Miyamoto so he presumably meant to analyze the Samurai class of the Tokugawa era although he also includes examples of training which extended through the Meiji period and up to the present day.

The Japanese had an interest in the training of the warrior class and approached the problem in an empirical and practical way, basing their psychology on observable behavior and concrete achievements in contest and battle. Frager pointed out that the training goals of the martial arts are slightly different from what most people expect from sports. The aim of training is never mere technical excellence or efficiency, that is merely a byproduct of the development of perfect form and concentration. The discipline of the martial arts was so demanding that it reshaped the student mentally and physically in every action. A man who achieved mastery of an art would show this in his every action. The idea was to develop concentration, and attention; to control the emotions, especially fear and anxiety.

The method of training involved little stress on intellectual explanation, direct experience was most important. Teachers showed students the value of self control directly, they didn't just talk about it. Mental development was highly valued, especially over mere technical skill. The teachers deliberately set out to improve physical skills through mental discipline by developing the powers of attention and concentration, and by eliminating the fear and nervousness which will inhibit performance. Frager notes that fear and anxiety, in small amounts may increase performance, but in larger doses will make it much more difficult to distinguish danger from trivia. Fear also causes greater rigidity in the response pattern which becomes more stereotyped and habitual. Reducing fear involves eliminating the fear of dying, and making a calm mind by creating a balanced and relaxed body. Learning to work with the hara, the lower abdomen, which is also the physical centre of balance is critical to this.

The mental abilities to be developed included vigilance, a response to certain classes of stimulus, and concentration, the ability to exclude irrelevant stimuli. Concentration is contrasted to absorption which occurs when the mind is passive, and caught up by the object. When the mind is absorbed, important stimuli are missed. This concept is what the priest Takuan Soho (1988) called fushin or "frozen mind", the condition where the mind is dragged around by the object of attention. When it is concentrated, the mind is actively directed at the object. It is like a mirror, reflecting just what is there. Takuan called this fudoshin or "immovable mind", the state where the object of attention cannot move the mind. Frager states that this mastery of the self through martial arts inevitably transcends the art and moves into all aspects of life.

Pyecha (1970) set up an experiment that studied subjects over a period of time. While the potential was there, this experiment was not reported as a longitudinal study. Instead, Pyecha compared two periods of Physical Education courses to two consecutive 8 week periods of Judo training. Control I was 8 weeks of handball followed by 8 weeks of volleyball. Control II was 8 weeks of badminton followed by 8 weeks of basketball. Form A of the Cattell 16PF test was administered pretreatment, at 8 weeks and at 16 weeks. The study was done on a random sample of male freshmen, who were nonvarsity athletes. All classes were taught by Pyecha, twice a week in two 8-week sets.

The control groups did not differ one from the other, and showed parallel changes in personality factors over time at both 8 weeks and at 16 weeks. Eight weeks of handball had the same effects as 8 weeks of badminton and 8 weeks of volleyball following 8 weeks of handball showed the same effects as 8 weeks of basketball following 8 weeks of badminton.

When the first Judo class was compared to 8 weeks of badminton and 8 weeks of handball, the Judo class showed a different set of personality changes. Judo I was higher than the controls on factor A. The Judo students were more sociable, good natured, easygoing, cooperative, attentive, softhearted, kindly, trustful, adaptable and warmhearted. A lower score on factor A implies a personality more aggressive, grasping, critical, obstructive, cool, aloof, hard, precise, suspicious, rigid and cold.

When the personality changes after the second set of Judo classes was compared to the 16 week scores of the controls, no differences were seen. Two 8 week sessions of Judo had the same effect on the students as did 8 weeks of volleyball following 8 weeks of handball or 8 weeks of basketball following 8 weeks of badminton.

Just what mechanism was involved in changing the personality of the Judo students in a different way than that of the control students during period I, is not suggested by Pyecha, who, in the introduction, notes the acclaim the Japanese have for Judo's significant contribution to personality and character development. Pyecha also does not attempt to explain why there was no difference between students of the control groups and the Judo students after 16 weeks either. Judo is an individual sport, as are handball and badminton, the period I controls, while volleyball and basketball, the period II controls, are team sports. If we suppose that some aspect of Judo itself, or of the way it is taught, may operate on students in the same manner as does a team sport, then the results could be explained. A difference in factor A is seen when comparing Judo to individual sports such as handball and badminton but this difference is eliminated after the control students participate in 8 weeks of a team sport. It remains to be shown how Judo is similar to a team sport and how it is different from an individual sport. Duthie et al. (1978) suggest that the close physical contact involved in Judo might explain the differences between it and the relatively non-contact control sports.

Greene and others (1974) used the Hand test, a measurement scale developed by one of the authors, to evaluate intermediate Moo Duck Kwan (Tang Soo Do) Korean Karate students and on controls in other phys-ed classes. There were no differences on 21 of 24 scales. The karate students differed on "facade self", the basic reality contact or the basic defence and coping mechanisms for dealing with the world. This facade self contrasts with the introspective self, a system that comprises the individual's recognition of his behavior, fantasies and ideals. According to one of the authors, personality operates through these two "faces" with the introspective self evaluating and correcting the facade self. The non-karate group showed higher scores on affection, dependancy and total number of responses (which is said to indicate a better psychological responsiveness to outside stimuli, a better reserve of potential responses). Karate students were more constricted and inflexible, less affiliative and deferential.

Interpersonal aggression was equal for both groups, as was the mean need to dominate and

control others. Karate students showed less desire to associate with others for pleasurable experiences. The authors suggested that Karate students may picture the world as an unfriendly place and tend to back off.

In a study of this type, it is difficult to say whether the karate students exhibited this personality type before joining the class, or whether they developed it as a result of participating in the class. The authors suggest that individuals may turn to karate not just to obtain physical exercise, but because of definable psychological needs and attitudes.

Duthie and others (1978) examined two groups of karate students. One which was defined as superior, members being listed in a Who's Who of martial arts, was much older and more experienced than an average group consisting of two karate clubs. Duthie noted that earlier studies showed no differences between groups of martial artists but did show differences with the general population. This might suggest that there is a self-selection to join the martial arts and Duthie wished to test this.

These researchers used the Adjective Checklist, a 300 word list that subjects check off, to measure personality, and a Martial Arts Questionnaire of their own design to gather background information on martial art style, expertise and attitude. On examination, the superior group was found to be higher than the average karate group on: defensiveness, self confidence, achievement, dominance, endurance, affiliation, heterosexuality, exhibition, autonomy and number of favourable adjectives checked. They scored lower on: succorance, abasement and counseling readiness. This implied that the advanced karate group were outgoing extroverts somewhat aware of the social environment who look at their selves positively and are trying to get ahead in life.

The difference between the two groups might suggest that training causes changes in personality, even if the students were originally self-selected to join. An alternative explanation might be that the superior group displayed precisely those personality traits that, had they owned them when they began their training, would result in their advancing and eventually rising to the top of their chosen field. In this case, those superior people measured were simply those who, due to their personalities, were followed by others less disposed to leadership roles. In a longitudinal study it would be possible to measure individuals at the beginning and at the end of a training period, eliminating these problems of both prior selection to join, and of the differential advancement of certain personalities.

Konzak and Boudreau (1984) studied male and female, university aged, traditional karate students. This was a cross sectional study with respect to belt level. The students were separated into three groups; beginner, (2 weeks training) intermediate (6 months and at least green belt level) and advanced (black belt, with at least 3 1/2 years training)

The authors point out that mental health is not just the absence of illness, but is an overall sense of wellness, in body and mind. Much of the recent self help and human growth interest concentrates on Eastern approaches which recognize this idea. The underlying reality of Karate is explained as self discipline, self awareness, control, mind-body harmony, mental strength and relaxation, and personal development. The training is designed to improve mental discipline, concentration, relaxation, self awareness and the feeling of personal competence, it is not mainly about physical skills. There are several ways of looking at martial arts, as an art form (giving grace and inner expression), as meditation, as a competitive non-contact sport, or as kick boxing. Konzak and Boudreau separate the arts into two general classes. Traditional training focuses on the art/meditative aspects while "modern" training concentrates on the sport/competitive aspect. Traditional training gives little time to tournament competition, stressing mainly mental discipline, character and physical skills.

The authors used Cattell's 16PF test and performed a preliminary analysis of characteristics for male and female students. The majority (40 of 42) of female students fit the "female profile" and had a feminine gender identification while the majority (34 of 42) of male students had a male gender identification. This same analysis was carried out on the separate beginner, intermediate and advanced students showing that 83% of male beginners were most similar to the other beginners, while 81% of female beginners were also most similar to other beginners. 83% of both male and female intermediate students were most similar to other intermediate students while 100% of advanced students of either sex were most like other advanced students.

Female advanced students differed from both beginners and intermediate females, as well as from the general female population. They were more intelligent, emotionally stable, assertive, lively, venturesome, trusting, imaginative, forthright, self-assured, and relaxed than women in the lower rank groups. Male advanced students were more intelligent, emotionally stable, lively, expedient, venturesome, tenderminded, imaginative, forthright, self assured, self sufficient and relaxed than the beginning or intermediate male students or general population males.

Of particular note was that while both advanced males and females differ from less advanced karate students and from the general population of males and females, they were quite similar to each other. The differences in gender identity were much less evident in advanced students than in beginner or intermediate students. Konzak and Boudreau state that "In this sense, the test results suggest the effects of karate training are not based on a particular sexual stereotype. Strength need not be machismo; sensitivity need not be weakness. It has been said that the woman who most needs liberating is the woman in every man and that the man who most needs liberating is the man in every woman. From these results it would seem that karate training is very effective means to achieve this form of harmony." (p.4)

It should be of great interest to those dealing with gender issues that martial arts training would seem to have the potential to create an equality between the sexes, at least with regard to gender identification within each person. It has often been suggested that a more feminine male would be more sensitive to women's issues and it would perhaps be reasonable to assume that a more masculine woman would be more understanding of men. Later in this paper we will discuss the idea of a physical equality between the sexes when we examine self defence courses.

The Konzak and Boudreau paper is a cross sectional study and therefore the question of self selection comes up again. If there were true self-selection, with students dropping out to create the differences in personality factors measured, as opposed to the students actually changing, then the intermediate level should be a mix of the beginner and the advanced characteristics. In fact the middle level had its own distinct pattern which was different from that of either beginner or advanced students. In personal interviews; 93% of the students said that karate had an effect on their lives beyond the physical. 79% said the training enhanced their sense of general assertiveness, and the women felt it made them more assertive in their relations with men. Some students said they were now more aggressive and assertive, while some said they were less aggressive and had more self control. 21% said they felt there was no change in aggression. The authors point out that this apparent difference in levels of aggressive feelings may point more to the various meanings attached to that word than to anything else. Of the students interviewed, only a small minority reported that they did not feel changed and changed for the better by the classes. The most discriminating factor in the analysis was the intelligence level, the authors suggested that this factor probably works through an improved ability to analyze, concentrate and relax, to improve scores on logistic tests. The class etiquette stressed humility, concentration, respect and relaxation. Talks on philosophy during class, and group reinforcement of ideals led to a greater sense of community belonging. It is postulated that a mechanism of high powered resocialization (brainwashing) is responsible for the changes in the students, the rhythmic breathing during training inducing what is almost a self hypnosis. The authors caution that with this power to

change, it is important that the teacher be knowledgeable, as a bad instructor might actually cause damage to the students. Karate training is proposed by these authors as a good self help mechanism.

Richman and Rehberg (1986) examined self-esteem before a sport karate tournament and the effect of winning a trophy during the competition. Students were grouped into beginner, intermediate, advanced, and expert groups. The Rosenberg self-esteem scale, a series of 10 questions designed to assess self esteem, was used, along with questions designed to give a self analysis rating in comparison to martial artists at an equivalent belt level.

Novices showed lower self-esteem than the other three groups while the other three were not different from each other. When compared to members within their own club, self-esteem was related to self-perception, but not self ratings of sportsmanship or discipline. Self-perception in this case is very similar to the concept of perceived self-efficacy which is examined by Ozer and Bandura (1990) and reviewed later. Self-esteem related to self-discipline when compared to others across the USA. Trophy winners had greater self-esteem before the competition than did non winners.

The authors concluded that 1-2 months of karate training was enough to raise self-esteem. Measures on the groups that trained for longer periods showed no changes in this measure. The self-perception of ability related to self-esteem. Self-perception of physical condition and self-discipline was also important to self-esteem, and self-esteem predicted performance. In this study then, it would seem that karate students have a realistic appreciation of their own abilities, and that possession of these abilities is related to their self-esteem. Training in karate does not seem to result in unrealistic appraisals of one's abilities.

This finding agrees with other work which would indicate that physical education students in general have a realistic perception of their own physical abilities and skills, and that this internal perception relates to both self-esteem and success.

Layton (1988) compared traditional Shotokan Karate students and dan ranks using the Eysenck Personality Questionnaire. The dan ranks ranged from 5 to over 20 years of experience. No differences were seen in personality when levels of dan grade were compared however. Dan ranks were less extraverted and neurotic than the student ranks. On the measures of psychoticism there were no differences. Layton suggested that those who are less extraverted, who are more susceptible to conditioning and are inclined to live their lives within relatively precise and narrow parameters are predisposed to reach the higher grades of karate which is a highly ordered and personal artform. A similar mechanism may account for the lower neuroticism scores of the dan grades as those who are calm and controlled will be able to better handle the demands of this martial art. As this was a cross sectional study, Layton suggested that selection (student drop-out) may account for a large proportion of the differences between student and dan grades.

Layton (1990) then reported another cross sectional study of traditional Shotokan Karate students using the State-Trait Anxiety Inventory of Spielberger et al. (1970 the state-trait anxiety inventory: test manual form x Palo Alto Calif. Consulting Psychologists Press.). Subjects ranged from novices to some black belts with 23 years training. Again, he found there were differences between Kyu and Dan ranks on A-state and A-trait anxiety with the dan grades being less anxious on each measure. More years of training was associated with less trait and less state anxiety. Trait anxiety was not associated with dan rank but state anxiety was, with higher dan ranks showing less state anxiety. Trait anxiety is a fairly stable personality characteristic and Layton suggests that less anxious subjects might be more likely to train for longer periods accounting for the difference between student and dan ranks. Layton then cites other studies that indicate acute physical activity may lower anxiety, and suggests that karate training may also lower transitory (state) anxiety

levels. Again, the need for a longitudinal study to examine changes in personality over time while training in a fighting art is apparent.

THERAPY AND MARTIAL ARTS

The following papers illustrate the potential role of martial arts as a therapeutic aid for the mental health community.

Reciprocal inhibition therapy is possible using martial arts training as a method of invoking a response inhibitory to anxiety at the same time as an anxiety evoking stimulus is presented to the patient. A calming activity is practiced at the same time as an anxiety causing stimulus is presented. This linkage of stimuli weakens the bond between the anxiety producing stimulus and the buildup of anxiety. Gershman and Stedman (1971) used Kung Fu training to treat a man with claustrophobia, and Karate to treat a man with a fear of flying. The researchers found that Kung Fu exercises took the subject's anxiety levels to a rating of 0 in less than 1 minute. Graduated exposure to confined spaces while doing Kung Fu exercises allowed the subject to experience a fast recovery from claustrophobia, and remain comfortable at 6 months after the treatment. In the second case the researchers linked Karate exercises and flying, reducing the subject's anxiety levels to zero in 2 sessions. This approach was taken after trying relaxation techniques which were deemed to be too slow. Again, 6 months after treatment, the subject remained well.

Seitz et al. (1990) recommended investigating martial arts as a model for energy management when looking at mental health. Both disciplines focus on intrapsychic and interpersonal energy, as well as the energy of being and existing. The martial arts focus directly on the energy involved in dealing with our own emotions, perceptions of trust and fear, and conceptions of reality. They also suggested that the martial arts may serve as models for interpersonal relationships and the relationship of person to world. Both the therapist and the budoka deal with the energy (called ki in Japanese) of being. The timing of a specific intervention by a therapist can be compared to the timing of swordsmanship, both involve actions that must occur at specific moments in order to be effective. In the words of the authors; "The martial arts have some important things to say in the area of mental health, particularly in terms of energy" (p. 463).

MEN, AGGRESSION AND COMBAT ARTS

One of the most often stated goals of training in the martial arts is to reduce aggression and increase self control. In older studies, two opposing theories on aggression were often proposed. The catharsis theory attempted to explain a reduction in aggression through combat arts by supposing that these arts provided a socially acceptable way to act out violence, thus "bleeding off" the impulses. The circular theory assumed that aggression is increased through exposure to aggression. The position of these two theories in sociological research has been discussed earlier.

The anthropological lesson from non-literate societies is clear. Whatever genetic potential we may have for aggressive behavior, early conditioning in cooperative behavior, and the discouragement of anything resembling aggressive behavior serve to make an individual and a society essentially unaggressive and cooperative. It remains to be seen what effect the fighting arts may have on adults, who have gone through their early conditioning, and on children who are still being socialized.

Johnson and Hutton (1955) wished to test the generally accepted idea that sports provide an outlet for powerful emotions which are accumulated in the course of daily living. This idea of a catharsis was first introduced by Aristotle who used it in the sense of a psychological cleansing through

watching tragic drama. In discussing this, the authors point out that unlike drama, sports are highly structured and rule bound and include no terrible punishments for transgressors as are found in classical drama. It is possible then, that with no punishment for the overtly displayed aggression of violent sport, the athlete might experience strong feelings of guilt rather than a catharsis. Another possibility might be that sports simply provide an outlet for a drive for physical activity and that the strict rules prevent any possibility of emotional release. Finally, it is possible that these same rules might function as a frustrating restriction which could actually lead to greater aggression.

The authors tested intercollegiate wrestlers three weeks before the first match of the season (control condition), four or five hours before the first match (pre-competition), and the next morning after that (post-competition). Previous research had shown wrestling to be associated with exceptional emotional stress. Buck's House-Tree-Person test of personality was used. This projective test, which involves drawing a house, tree and person with crayons, was thought to be suitable as it had a low refusal rate when applied to subjects in a highly disturbed emotional state. Before the first match, the wrestler's IQ estimates dropped from an average of 110 to 92. The subjects showed increased anxiety, compulsiveness, neurosis, and body consciousness. They were more aggressive but under strict control, tending to be intrapunitive or self punishing rather than directing the aggression outward. These results could indicate the effects of pre-competition stress which results in a "general constriction of personality" in preparation for the match.

After the match, the IQ scores returned to normal, and the neurosis was gone. The aggressiveness of the wrestlers was lower than the control condition, regardless of whether the wrestler had won his match or not. These control scores were said to be somewhat higher in aggressiveness than would normally be found.

The authors concluded that the results did indeed give support to the idea that sports have a cathartic effect on aggressiveness.

Husman (1955) used a projective technique to study boxers, wrestlers, cross country runners and a non-athlete, control group. Tests were administered before during and after the sports season creating an experiment that was both cross-sectional over different sports and longitudinal with regard to one season within sports. Aggression was broken down into several types. Extrapunitiveness, where aggression is employed overtly and directed outwardly toward the environment, Intrapunitiveness, where the aggression is turned by the subject upon himself, Impunitiveness, where the aggression is evaded in an attempt to gloss over frustration. Extrapunitive ego-defence is defined as the subject acting aggressively, extrapunitively, to protect his ego.

Boxers were found to be the least aggressive of all the groups, they showed less overall aggression than the wrestlers, the runners and the controls. Boxers had less tendency than the cross country runners and the control subjects to express their aggression outwardly (extrapunitiveness). They tended to be intrapunitive or impunitive, blaming themselves or assigning no blame for frustrations. Boxers also seemed to show less intrapunitiveness than wrestlers, runners and controls.

After a contest, the boxers showed more super-ego (some accusation, charge or incrimination of the subject by someone else) than the controls, a result the authors suggested would indicate guilt feelings for the overt actions of the contest.

Cross country runners tended to aggress outwardly (be extrapunitive), blame others to protect their own egos, and have more ego defence than boxers. The runners were also more extrapunitive, and less impunitive than the non-athlete control subjects. The runners had more super-ego than the controls, which the authors speculated might reflect guilt over their increased tendency to

aggress against people and objects (extra-punitiveness).

These results could indicate that those with more aggressive personalities tended to become runners while those with less aggressive personalities became boxers. This conclusion would, however, seem to be counter-intuitive. The possibility that the combat sports actually produced less aggressive students, rather than attracted them was not tested here. The effect of the sport over the course of one season was, however, tested.

No significant differences were noted over the course of a season but the trends were reported. Aggression tended to increase over the sporting season for all athletes. Combat episodes tended to turn that aggression inward, to lower extra-punitiveness and ego defence as well.

The authors conclude that the aggression of the boxers was significantly lower than that of the wrestlers, runners and control subjects. A season of sport participation tended to raise aggression levels according to one test, while lowering extra-punitiveness, intra-punitiveness and super-ego in another, but these results were not significant.

These two studies tend to support the idea that combative sport lowers aggressiveness. It should be pointed out here that the aggressiveness measured in the combat athletes tended to be directed inwardly rather than outward toward others. Neither of these studies support the view that "violence begets violence", that combat sports increase the aggressiveness of the participants.

MEN AGGRESSION AND MARTIAL ARTS

More recent studies on aggression have focused on the eastern martial arts rather than on wrestling or boxing (which is no longer in favour as a collegiate sport) and these will be considered next. The conflict between the catharsis and the circular theory is still present although the circular theory is now more commonly called the social learning theory.

Kroll and Crenshaw (1970) compared Karate students to students of several other sports. The Karate students were more tense, conscientious, rule bound, and independent than gymnasts. Compared to wrestlers and football players, karate students were more self sufficient, reserved and detached.

Rothpearl (1980) measured hostility in non-karate student control subjects, novice karate students and advanced students. Of a sample of 6 schools, 80% were male. He found that the novice karate group showed no differences from the control students which would suggest that there is no self-selection of students on entry to the karate classes.

The karate students as a whole, appeared moderately suspicious, and favoured indirect hostility. They would throw or break things when angry and play practical jokes rather than punch or strike. The intermediate groups were higher in measures of argumentativeness, assaultiveness, and had more varied methods of hostile expression than either the beginning or advanced students.

Karate students of higher rank showed less anxiety and hostility (verbal hostility, resentment, indirect hostility, irritability and suspicion). He used novice students as controls in this study so that there was no possibility of self-selection on entry to the art.

Rothpearl saw evidence for cathartic release in the advanced group, and evidence for circular effects at the intermediate level. The greater number of methods of hostile expression in the intermediate group may reflect the acquisition of new fighting skills. It was supposed that Karate training exposed students to aggression elicitors but then, (reflected in the higher belt ranks)

trained the students to repress that aggression, thus they were eventually desensitized. Two possible methods for producing this result are suggested, the first is simply not fighting in a certain situation, which becomes a habit after a while. The second possibility concerns exposing students to conditions of intense competition or pain, conditions that would normally elicit fighting responses, and training the students restrain themselves.

Nosanchuk (1981) noted that there is strong evidence from the theories and work of Albert Bandura (eg. Bandura 1973) to suggest that the acquisition of an aggressive repertoire, even if directed toward self defence, has the effect of increasing aggressive behavior. In earlier work, (Lord, and Nosanchuk, 1977) the author noted that taking a nonviolent nonretaliatory stance seems to invite physical violence. This seems to leave one with a choice of being either a victim or an aggressor.

In searching for a third alternative, Nosanchuk noted conventional wisdom stating that training in one of the traditional Oriental martial arts should provide one with self defence skills while not raising aggressiveness. Nosanchuk also noted that learning self defence skills may actually change ones physical appearance enough to prevent problems with possible attackers and cites a magazine article on self defence where the author stated the women became more confident, purposeful and less vulnerable in their body movements.

To test the relationship of martial arts with aggression, Nosanchuk took measures of aggressive fantasy on traditional karate students at various skill levels. In this cross sectional study, he found that longer training was correlated with less aggressiveness. He tested 4 personality variables to try to determine the reason for the reduction; self-control, self-assertiveness, self-esteem and self-confidence. Nosanchuk studied three groups by their rank. Beginners were white and yellow belts, and advanced students were brown and black belts. Intermediate students were those between. A drop in aggressiveness was associated with increasing belt level. Self confidence rose but then fell as students of increasing belt level were examined. The reduction in aggression with increasing belt level did not seem to be associated with changes in self-control, self-assertiveness, self-esteem or self-confidence. The training program, seemed to both raise self-esteem and lower aggressiveness but independently of each other. Higher scores on self-confidence were accompanied with higher scores on aggressiveness in the intermediate belt levels, and both dropped in the higher belt levels with the seniors reporting they had much room for improvement. The sub-factor of "constructiveness" was found to be associated with lower levels of aggressiveness but was not associated with belt level. Constructiveness is involved with solution-oriented thinking.

It is worth noting that the rise in self-confidence and aggression in this intermediate group seems to parallel the rise in argumentativeness and numbers of hostile methods found by Rothpearl in his intermediate group. A rise in self confidence may allow the students to respond to challenges more directly than previously. The subsequent drop in self confidence found by Nosanchuk and drop in aggressiveness found by Rothpearl are also likely to be linked.

The study of martial arts would seem to provide an alternative to being either an aggressor or a victim, since the learning of self defence skills, at least in a traditional karate class, does not seem to make one more aggressive. This finding was contrary to the expected finding and supported the conventional wisdom. Nosanchuk suggested that the mechanism for lowering aggression may be the traditional methods of training themselves. Traditional karate training, as defined by the author, stresses self control, conflict avoidance, and care in the amount of physical contact allowed during training. Other things which are stressed, include kata (patterned movements), meditation, philosophy, and respect for others. Another possible mechanism by which higher belt ranks might become associated with lower aggression is that the instructors slowly ease out aggressive students, thus selecting for low aggression. Nosanchuk proposed examining nontraditional dojos

(those teaching "kickboxing" or agonistic skills only) to see if aggression rises with experience under this type of training. If it does, this would indicate something in the traditional training method which mediates this effect. The second, selection, theory could also be examined by looking at dropouts. If those who drop out of a traditional school are more aggressive than those who stay, this would suggest a method by which the higher belt levels test less aggressive.

Nosanchuk and MacNeil (1989) questioned the impact of the acquisition of aggressive skills on aggression. They hypothesized that longer training would be related to less aggression in schools giving traditional teaching, while longer training would be related to more aggression in schools using "modern" teaching methods. In this case, traditional training is assumed to allow the study of self defence techniques without arousing aggressive feelings. There is a certain element of detachment from the violence. This result might be due to the stress on ritual fighting, or kata, which present no opponent. Another factor might be the amount of negative sanction toward violence from the sensei, who is hypothesized to be a model of restraint and non-aggression for the students. This definition of a traditional school would tend to place it in the religious/philosophical/spiritual classification of civilian arts as proposed by the International Haplogological Society (see Donohue and Taylor, 1994). A "modern" school was classed as one which put much less emphasis on kata, as opposed to technical instruction, drill and sparring. Modern schools were also defined as those which did not disallow heavier contact to the head or other vital areas during sparring, were less concerned about respect for the teacher, the uniform and the school, and put less importance on meditation, and philosophy. Under this classification, "modern" schools were not particularly different from the "traditional" schools, but stressed other aspects of the training. There is no indication that the modern schools were sport oriented, fighting oriented (dueling) self-defence oriented or otherwise different. Perhaps the difference here was more along the lines of the perceived separation between "jutsu" and "do" forms, with an emphasis on technique as vs. philosophy.

The authors hypothesized that the expected findings of lower aggression in traditional schools might be a result of either selection (modern schools may tolerate more aggression) or training. The authors designed a cross sectional study of 7 schools, which also included "quitters" since they would presumably have different reasons to drop out of each type of school. If selection is operating, traditional schools might show less aggressive students because those who were aggressive would be expected to drop out or switch to modern style schools. If selection is not operating on aggression, then students would quit for other reasons and should show the same aggression levels as that of the similarly experienced "stayers". All students were tested using an aggressive fantasy measurement where they were exposed to a scenario and then asked to rate how likely they were to respond in various ways. A further projective test was used based on responses to six Rosenzweig Picture Frustration items.

The authors found that advanced "traditional" students were indeed less aggressive than basic or intermediate students. Intermediate and advanced "modern" students on the other hand, were more aggressive than basic students but this was a small difference. There was little difference between intermediate and advanced students for either style, but the modern students were more aggressive than the traditional students. The greatest differences were seen in the advanced student levels. This supports the idea that some aspect of the training in the "traditional" schools is responsible for the reduction in aggression. As both types of training are likely to be otherwise similar, future research should concentrate on these factors.

As to the selection hypothesis, quitters showed no differences in aggression compared to stayers of comparable belt level. There were no "movers" who went from a traditional to a modern dojo. On this basis, it would seem that the selection theory was not supported.

The authors concluded that modern training methods increased student's aggressiveness while

traditional training methods reduced it. There was support for this difference being a result of training rather than of student selection. The particular mechanism of aggression reduction is still unknown, but the authors suggest: 1. The sensei operating as a model of restraint and control, 2. the effects of teaching ethics and philosophy along with the physical skills and 3. kata practice may be responsible.

The apparent reduction in aggression in boxers reported by Husman (1955) must be reconciled with the increase in aggression seen for "modern" karate students. Is boxing, an agonistic, combat sport different than "kickboxing"? One possible difference might be the intensity and frequency of training, with boxers working out much harder and more frequently than the typical karate student. Another difference might be in the method of sparring, boxers intend full contact strikes to the head and body, there is no question of who is the better fighter. As a result, boxers may learn to withhold and control their blows for the sake of continued training. Karate students on the other hand, may be able to "slip in a good one" now and then but rely largely on rules against full contact to prevent retaliation in kind. This will of course depend on the type of karate training being considered.

A point not emphasized by the authors in this paper concerns the relatively short time it took to decrease the aggressiveness of the students. The intermediate and advanced students of the traditional classes showed roughly the same amount of aggression while the beginners showed much greater levels. It would appear from this and other work that the beneficial effects of training do not require much time to become evident.

Trulson and Kim (1985) conducted a cross sectional study of Tae Kwon Do students using the Jackson Personality Inventory. Those students with less than one year of experience were found to be no different than the general population on several psychological measures, indicating that there was no selection occurring on entry into the martial art classes. As experience level in the martial art increased, students showed lower anxiety, a higher sense of responsibility, a decrease in willingness to take risks, they were less "radical", had increased self esteem, and were more socially intelligent. These trends were especially pronounced in the black belt levels. Other effects were seen in increased physical fitness, defence skills, self discipline, concentration, and respect.

The authors note that aggressiveness often comes from low self-esteem, and the martial arts may reduce aggressiveness through this mechanism. This does not agree with the Nosanchuk study above which would seem to indicate no relationship between self-esteem and aggression.

Trulson, in a related study (Trulson, 1986) used several measures of personality to examine male "juvenile delinquents" given training in "traditional" Tae Kwon Do, "modern" Tae Kwon Do and in physical activities, all with the same instructor. Juvenile delinquents were defined as those under 18 scoring highly on psychopathic deviation (disregard for the rules expected of individuals), schizophrenia (lack of social graces and negative or "odd" behavior) and hypomania (expansive behavior, behavior not within the normal bounds of custom. These subjects also scored low on measures of interest in the opposite sex, suggesting a predominately masculine type of response. The study was longitudinal, with measures being taken before training and after 6 months of training. All classes were taught by the author.

The "traditional" training included meditation, general and specific Tae Kwon Do exercises including kata, lectures on philosophy stressing respect, confidence, self-esteem, fitness, patience, perseverance and honour. Personal responsibility was stressed in these lectures. The "modern" training contained only free-sparring and self-defence techniques as well as other physical exercises. The control group participated in various physical activities and was intended to control for maturation and contact with the instructor.

At the end of 6 months the "traditional" group displayed a normal psychological profile, with no

delinquent traits. They displayed an aggressiveness below the average, as well as lowered anxiety, increased self-esteem, social adroitness, and orthodoxy. The "modern" training group showed a greater tendency toward delinquency than before the training, a very large increase in aggressiveness, and in general, the opposite of the other traits noted for the "traditional" group. The control group showed no changes in aggressiveness but some increase in social adroitness and self-esteem.

The author notes the effects on aggressiveness in the "modern" group with extreme concern as there are many martial arts schools now teaching youths which may be using this type of training and which may be producing more aggressive students.

Trulson attributes the effects of the "traditional" training to four things:

1. The instructor acts as an authority figure to the students,
2. the instructor acts as a positive role model,
3. the physical conditioning is intense and the student uses much of the excess energy possessed at this age and
4. the practice sessions incorporate philosophical/psychological conditioning.

In a follow-up study of these subjects conducted over a year after the experiment, "traditional" students remained non-delinquent while "modern" and control group students exhibited delinquent traits.

Skelton et al. (1991) studied boys and girls aged 6 to 11 for aggression level with respect to five belt levels. These students were all from the same Tae Kwon Do organization. Aggressiveness was found to decline as the belt rank increased. Aggression was ranked by the parents in this case, not the children themselves. The authors note that they had no way of controlling for the effects of student selection based on drop outs in this study, and thus cannot comment on its influence on the results.

WOMEN, FEAR, SELF DEFENCE AND COMBAT ARTS

From an extensive review of the assault literature (Taylor 1992), it is apparent that the main concern in the self defence or martial arts training of women should be the reduction of fear and anxiety in order to increase their involvement in society. The effects of the fear of attack are of far more importance than is the actual risk of physical assault.

WOMEN AND SPORTS

Williams et al. (1970) noted that in general, for all sports, athletes show low anxiety and neuroticism, and are high on measures of surgency, aggression, achievement, expediency, and independence. Athletes also tend to be ambitious, disciplined, sociable, sensitive, deferential, venturesome, bold, and confident. Often however, no differences from the general population are seen.

In this study the authors compared the results of a 16PF and an Edwards Personal Preference study, to the skill level of women fencers. National level female fencers were ambitious, had a desire to succeed, were high on abstract thinking, imaginative, and creative. They were fast learners, independent, had a below average desire to affiliate, were loners, not followers, were aggressive, had a low desire to lead or dominate but were dominant in personality. This indicates that they had no desire to either dominate or be dominated. The fencers showed average scores

on stability and anxiety, were reserved rather than outgoing, and had a low desire to need or be needed. The main difference between high and low level competitors was on the factors for dominance.

There is little doubt that physical activities such as sports can modify or change the psychological makeup of women as well as of men.

WOMEN AND MARTIAL ARTS

Finkenberg (1990) was interested in exploring the relationship of martial arts to self-concept in women. He noted that many sports are reported to have a relationship with self-concept, that self-concept may be enhanced through acquisition or mastery of a new skill, and that novices are most likely to gain in self-concept through participation in physical activities.

Finkenberg compared women in Tae Kwon Do (TKD) classes to women in general health classes (the control) using the Tennessee Self-Concept Scale. This is a scale of 100 descriptive statements which the subjects use to portray his or her own self-picture by assigning each a score out of 5 from completely false to completely true.

The study included pre-test and post-test measures making it longitudinal over the test period of 8 weeks. The subjects served as their own controls and the health class would control for other factors which might occur over the time period. Finkenberg noted that self concept and performance is related in many sports. Self concept and behavior, general personality and mental health are also related.

Compared to the control, a health and consumer health class, the TKD class showed no difference on self criticism, moral-ethical measures, family values or behavior. The TKD class did show higher self concept. On the subscales the class also showed higher physical, personal, social identity, and satisfaction self concept than did the controls.

The TKD class seemed to improve self concept without affecting other social values and behaviors. The authors conclude that an 8 week course of this martial art will enhance the self-concept of women. The study agrees with the findings of Duthie et al. (1978) on self confidence, and of Richman and Rehberg, (1986) on self-esteem.

Madden (1990) noted that in previous studies of martial arts, advanced students appeared to be more mature and showed higher self-esteem than less advanced students, which was associated with winning in tournaments. Male karate students had a better body image but were otherwise similar to others in personality. Improved body self-image might be beneficial to women students.

In studies of self-defence courses for women, students showed enhanced perceptions of efficacy and control, while exhibiting decreased feelings of vulnerability to assault and decreased anxious, intrusive thoughts. Self-Defence courses may also increase feelings of control over danger in assault victims.

Madden notes that martial arts classes, with their stress on restraint may be counterproductive for women who might need to be taught less restraint (see Kidder et al. 1983). A study of karate classes was undertaken to test their effect on women. Previous research by Madden, at the three month point in classes, indicated that karate students felt less in control of events and more vulnerable to misfortune than did physical education students at a similar stage. This might indicate that those who feel like victims enroll in karate but it might also show that karate classes do not always enhance feelings of control. At the initial stages of training, karate classes may make

students feel less able to defend themselves.

The 1990 study was set up as a longitudinal survey over one semester of classes. Pre and post tests were done on four semesters of students. The results of the four classes did not differ from each other. The style was American karate, based on Isshin Ryu and the same syllabus was followed each semester. The course covered basic techniques, a kata, self-defence moves, limited sparring, and lectures on attitude and martial arts philosophy. The course differed from a traditional course in that instruction was given in English rather than in Japanese or Korean.

Madden wished to examine the student's perceived control and vulnerability. A loss of perceived control is often associated with depression, so that factor was also examined. The study explored differences in the perceptions of women and men. It also explored differences in students who had been physically assaulted as compared to those who had not.

Overall, students at the end of the course felt in better physical condition, were less depressed, and felt they had a better control over the avoidance of attack and preventing serious injury if attacked. They also felt less vulnerable to having bad things happen, to being attacked and to being injured in an attack.

When women were compared to men, the women felt less able to control events in general, more likely to be attacked, more likely to be injured if attacked, and more vulnerable to bad things in general. The same pattern was seen in tests before and after the class, but women improved on their scores. The men also improved when compared to themselves in pre and post class testing.

Sixty three percent of the students had been previously attacked by someone who wanted to harm them. All the attacks were physical and none were sexual in nature. When comparing students who were previously attacked to those who had not been attacked, the students who had been attacked felt less depressed, and more in control over being attacked. Madden did not report the separate results by sex. This result is similar to one reported by Ozer and Bandura (1990) described later. Perhaps students who were previously attacked have a more realistic idea of an attack and the usefulness of the techniques learned

Contrary to expectations based on victimization literature, the attacked students did not differ from those who had not been attacked on many variables, and where they did, they felt in greater control than the others. The fact that none of these assaults had been sexual, and that they were mostly fights, broken up quickly may distinguish them from other assaults reported in the literature.

When asked why they had taken the course, self defence was given as the reason in 66% of the cases, general health in 61%. Thirty nine percent expressed a desire to learn the skills, 34% wanted to improve their appearance through physical conditioning and the same number (34%) wanted to improve self-confidence. The same reasons were given at pre and post class testing.

When asked, 94% of students said they were willing to hurt an attacker, and 84% said they would be able to resist an attacker. There was no change between pre and post class answers to these questions and there was no difference in answer when attacked and non attacked students were compared. The idea that Karate training increases aggression is not supported by these results since the class did not change student's expectations of resistance, although the expectations of resistance were very high, and any changes may have been masked by this.

Madden notes that while most students join a martial arts class for self-defence, martial arts training is not exclusively self-defence oriented, and that the skills may take several years to learn. Women who wish to learn self-defence may be better off in a class devoted to teaching women self-defence. There may be differences between the effects of self-defence and martial arts training

on women, and martial arts instructors should attempt to recognize women's different socialization and experience with sport. To counter these arguments, Madden noted that both sexes benefitted from the karate class in the short term (29 classes), showing enhanced feelings of control over physical assault, reduced perceived vulnerability and reduced perceived likelihood of being attacked.

WOMEN AND SELF DEFENCE

Kidder et al. (1983) noted that fear is the most common reaction to victimization and that fear exacerbates the victimization. After an attack it is common for fears and nightmares to persist. Fear makes assault completion much more likely. Women who had been raped, most often reacted with fear during the attack while women who avoided the attack, most often reacted with suspicion and anger at the prospect of assault. This was a general observation, there was no difference in reaction or results even when weapons are involved. The authors noted that in psychological experiments it was found that women were just as aggressive as men when told their behavior was private or when their aggressive behavior was rewarded. In general however, women tended to show more indirect aggression than did men. The authors point out that self defence and assertiveness training needs to be aimed at women because they don't know "how to say no". Women must thus take responsibility for the solution to assault, while not accepting responsibility for the problem.

In this paper three studies are presented. In the first, the authors were participant observers in two self defence classes given twice a week for 14 weeks. From the start to the end of the course, the women felt stronger, braver, more in control, and more able to defend themselves. They were both more cautious and more confident. The women learned to recognize a potential attack as well as to handle the physical aspects. In these classes the teachers told the women to "get mad if someone tampers with you without permission" to convert fear to anger. In the practical test at the end of the course, the women were attacked by members of a wrestling team. The women did indeed get angry as they defended themselves. The authors noted that students must be taught to separate consensual from offensive acts, and to define their personal space.

The second study examined the effects of self defence on perceived rights of resistance. The authors measured student's perceptions of rights before and after the class. In one class a male instructor taught, while in another a male and female taught as a team. The classes were similar in response at the start of the training but differed by the end. The class with the lone male instructor showed a decline in the perceived right to resist from start to finish, and no other changes. In the jointly taught class students showed an increased feeling of the right to resist, the feeling that they would resist, a reduction in the feeling that they would be afraid, and a reduction in the feeling of being helpless. The class was neutral in their perceived likelihood of feeling angry. Both classes were taught the same techniques but the teaching methods were different. The single male instructor was very cautionary, warning that the techniques should be used carefully because the attacker "might be a kid" and the women "could get sued". The instructor didn't talk about the student's rights to resist. The joint instructors stressed these rights to resist. From this result it is argued that the "psychological" lessons taught in these classes are more important than the specific techniques.

The third study was of a class of assertiveness training, teaching women to say no, as well as teaching them how to say "I want". All these classes showed an increase in feelings of the right to refuse, the right to request, and a perceived likelihood that they would refuse or request.

Ozer and Bandura (1990) studied a Mastery Modeling program (Model Mugging) of self defence. This course stressed learning physical skills against unarmed male sexual assailants who wear

special padding which allows the women to counterattack with full force. The authors looked at the mechanisms for psychological change which were involved in this program. The course showed that students developed an enhanced perceived coping ability and better thought control. They experienced a decreased perceived vulnerability to assault (fear), lower negative thoughts and lower anxiety.

The regulation of behavior is through a person's perceived self-efficacy and through disturbing negative thoughts. Empowerment, in this study, was defined as giving students the skills and the self-belief to exert control over their own life. Empowerment works through perceived self-efficacy. Women's lives are thought to be restricted by a sense of inefficacy or the inability to cope with the threat of sexual assault. It is imperative that methods be found to reduce and control both this fear and the physical likelihood of sexual assault. The authors give a series of relevant findings from previous studies.

1. 80% of U.S. rapes are accomplished by unarmed attackers.
2. Resistance works to prevent rape.
3. Physical resistance does not increase injury.
4. Screaming plus physical resistance is the best overall strategy.

At this point it must be noted that women need a perceived self-efficacy to resist, and they must have this even if they already possess self-defence skills. Even untrained women, if they are dominant, assertive, with an internal locus of control (they believe they can affect change) are highly likely to resist an attack. These women can be assumed to have a high self-efficacy. On the other hand, having the tools of resistance does not guarantee they will be used, especially if the woman so trained does not really believe the techniques will work.

Perceived self-efficacy affects activity, all people tend to avoid actions and environments where they believe they can't do anything to prevent discomfort. People tend to go to places they believe they can handle. The perceived self-efficacy to exert control over threatening events has a direct effect on anxiety. Threat is not a fixed quality, it is not related to "reading the signs" but is assessed by each person with relation to their perceived self-efficacy. If one feels one can cope with the situation, there is little reason to fear. If one can't cope, one tends to dwell on that inability, and fear is the result. Perceived self-efficacy also mediates anxiety and stress. Fear and stress are low when faced with an event within the perceived self-efficacy. As self-doubts in coping arise, there is a large increase in subjective stress levels and physiological stress arousal. Perceived self-efficacy also affects thought patterns. A person with a high perceived self-efficacy in controlling intrusive negative thought will attempt to control those thoughts, and succeed. A low perceived ability to control thoughts leads, by a vicious cycle to anxiety. It is not the absolute number of negative thoughts, but the perceived ability to control them that causes anxiety.

Fear itself does not directly affect behavior, women will walk alone at night, even when they are scared to do so. The lack of fear does not cause women to neglect self-protective measures. These are taken even if the women are not scared at the moment. Perceived self-efficacy affects fear and action by its influence on the judgement of personal risk and vulnerability. Perceived self-efficacy is involved in the judgement of the riskiness of any particular situation.

Belief in self-efficacy is increased by:

1. Mastery experiences, in doing what is fear-inducing. Successful performance of fearful actions means perceived self-efficacy is increased, while unsuccessful performance means perceived self-efficacy declines.
2. Modeling experiences, watching as a model shows how to cope with a situation.
3. Social persuasion and

4. changing physiological states that signal strength or other desirable traits.

The self defence course studied in this paper uses mastery modeling (1 and 2) techniques, and also provides physiological clues to self defence capacity and the verification of that ability by "fighting" the modeling attackers. The course is mainly physical, emphasizing disabling strikes to vital targets on a padded attacker. Mastery comes through student effort, while the modeling component is provided by watching instructors and other students do the techniques.

Students were tested before and after the course and 6 months after that. Over the period of the course and at 6 months later, the students showed increased perceived self-efficacy in the ability to defend themselves, and to control potential threats. The perceived self-efficacy to control negative thoughts did not change during the course but at 6 months post-course the perceived ability to control negative thoughts was increased over the pre-course tests. It is not surprising that negative thoughts about attack should be relatively high immediately after a self defence course is completed. A stronger coping perceived self-efficacy led to a stronger thought control perceived self-efficacy and less negative thoughts.

An important point to note is that skill level in the self defence techniques as ranked by the instructors and models was not related to perceived self efficacy. The acquisition of skills is not enough to instill the belief in the ability to use them. This finding applies directly (and negatively) to the theory that the acquisition of an aggressive repertoire leads to aggressive behavior.

The women showed no change in their estimates of danger in society at large, just in their own ability to judge and deal with it. They showed a reduced fear of assault. Higher coping perceived self-efficacy led to a lower sense of vulnerability, lower anxiety, and a better sense of judging risk. Perceived self-efficacy of controlling thoughts was not related to perceived risk or vulnerability which would indicate that these students are not fooling themselves into thinking they are safe. The judgement of risk in general and the judgement of perceived risk are unrelated.

In addition to these immediate effects, the women also showed an enduring increase in participation in society, they were more active in community, social and recreational activities. The perceived ability to cope with attack, or to control thoughts both led to higher involvement. A high judgement of vulnerability is related to negative thoughts, and means a reduced ability to judge risk at any time, more negative thoughts, more anxiety, and more avoidance of outside activity.

Some of the women taking the course had been previously assaulted. The pre-course testing showed these women to have lower coping perceived self-efficacy, to be more avoidant, to have more negative thoughts, poor risk determination ability, and to have greater feelings of vulnerability. At the post-course and 6 month follow up testing, the assaulted women showed no differences from the other women. In fact, the assaulted women showed better perceived self-efficacy to control thoughts, less negative thought and lower anxiety about sexual assault. This indicates the powerful therapeutic value of self defence courses, and their ability to change psychological states.

The question arises, "does self defence really work, or are these women being given a false self-confidence"? No concerns of this type were voiced by those women who had taken the course. They were not more reckless, but more adaptable to situations.

In self reports of 40 attacks by alumni of this course, there were 38 escapes. 30 women disabled their attacker, while 8 men ran away in response to counterstrikes. Two women did not escape, but chose to submit because they were facing weapons. There were also over one hundred reports of de-escalations of assault, using verbal techniques taught in the course, ie. a strong no.

Patricia McDaniel (1993) notes that both women and men are afraid of crime but that women's

fears are greater than men's even though their risk of crime and injury is actually smaller. This greater fear of crime is usually attributed to a fear of rape.

McDaniel notes that learning self defence skills may not guarantee a woman's safety, but they do provide women with a degree of power to determine the outcome of an attack, and prevent women from automatically assuming the role of victim. The martial arts often take years to master, while women's self-defence classes teach skills which can be mastered in 6-8 weeks. This self-defence training is as much psychological as physical, helping women overcome socialized tendencies toward fear, helplessness, passivity and low self-esteem, giving them a sense of their right to protect themselves.

The author reviews the literature on the role of physical resistance in rape avoidance and finds that there is a good case for resistance as a method to avoid attack, avoid injury, and avoid feelings of fear and helplessness. McDaniel then goes on to discuss several objections to fighting back, and the relevant research which would seem not to support these objections.

McDaniel then reports the results of a study of fear levels in women, before and after a self-defence class. She used eight measures of fear to characterize New Zealand women in a self-defence class called "Positive Action", and compared them to a control group (YMCA fitness class). The control subjects were less fearful than the participants of the self-defence course at the beginning of the classes. At the end of the classes, the students in the self-defence course showed reductions in all fears, as well as better self-confidence than the controls. The author suggests that although most women join a self-defence class because of fear, even non-fearful women can benefit from learning these skills.

PSYCHOLOGICAL EFFECTS OF COMBAT ARTS, PART II

RECOMMENDATIONS

Henderson and Bialeschki (1993) noted that women are restricted by fears for their physical and psychological safety, psychological safety being a fear of harassment because of bad body image. They call for all health, physical education, recreation and dance professionals to address this problem but don't suggest how.

Some immediate suggestions come to mind which may address the problems of male aggression, female fear, and perceived gender inequality.

"Traditional" martial arts training (as defined by Nosanchuk, Madden and Trulson) should be made available to high school students. Realistically this would be in an extracurricular format since the number of instructors is limited. Traditional training would provide a way to control aggression levels in men at a critical point in their lives, when they are changing from potentially abused children to potentially abusive adults. Although studies show that it is early childhood that is the decisive time for learning aggressive or non-aggressive behavior, it is not likely that martial arts training will be acceptable in the public school curriculum in the near future. This is not to say that it is impossible to teach young children the martial arts, as the hundreds of "kids classes" across North America will demonstrate. The ability of martial arts to change the attitudes of adults, as

suggested in the papers reviewed above, would suggest a similar ability to change the attitudes of adolescents.

Martial arts training for both men and women would allow them to learn new ways to respond and deal with aggressive impulses, and to become more accepting of their alternate gender impulses, as is seen in Konzak and Boudreau (1984). Women who are more accepting of their masculine side, and men more accepting of their feminine side could contribute to a more general equality.

Self defence training should be included in all high school physical education programs, and even, perhaps in the lower grades. It seems undeniable that self defence courses benefit women, and there is no reason to believe that they would not benefit boys as well. Self defence is not difficult to learn and teach, and the practice would fit nicely into any system of physical training currently running in schools. There is always the fear, however, that young children taught how to defend themselves would use these skills to beat up other children.

Boulton (1991) studied playful and aggressive fighting in middle school children. He found that children have a very good sense of what is rough and tumble play and what is aggressive behavior. It was rare, in Boulton's study, to see a rough and tumble incident escalate into an aggressive incident, which would indicate that children of this age have good self-control and can limit their encounters to "agreed upon" rules. While the ability of children to distinguish between play and fighting does not guarantee that they will not use self-defence skills to hurt each other in a fight, it does indicate that they would not accidentally harm each other with the skills while playing. It could also be argued that children who wished to harm each other would find ways to do so without exotic fighting skills. The type of bare-handed self-defence skills taught to children would not necessarily concentrate on striking or throwing skills designed to damage an attacker, in fact escape and evasion skills would likely be more practical for children who lack the strength and weight to seriously damage an adult attacker. As for such skills as eye or throat strikes, children already possess this knowledge.

There is evidence that education programs can give children who are kindergarten-aged (Harvey et al. 1988) and those who are in grades 4 to 6 (Sigurdson et al. 1987) valuable information about the prevention of sexual abuse. These children can both understand and learn this type of self-defence material. Conte and others (Conte et al. 1986) examined several sexual abuse prevention programs for young children. They state that: "The value of self-defence training may not be just in teaching children how to defend against assaults, but also that such skill increases children's confidence in their abilities to protect themselves. This increase in confidence may be assessed by potential offenders who sense the child is 'not an easy mark'" (p.149). The authors recognize that self-defence training for children is controversial but "Even if children are not likely to be successful in using self-defence techniques to resist or escape, if research indicates it does increase children's self-confidence it may be a helpful prevention technique." (p. 150) That research should be done.

Richard Barth (Barth 1993) presents an analysis of life-skill training which may be initiated in schools. He combined training in self-protection and self-control and gave an analysis of what specific skills are needed by children from pre-kindergarten through high school age. The combination of self-protection and self-control skills is quite similar to the description of a "traditional" martial art with its combination of fighting skill and instruction in respect, etiquette, and personal responsibility.

A final comment by Conte et al. (1986) is important. They state that "sexual abuse of children is also an inherent condition of a society which allows the strong to abuse the weak." (p. 154) If self-defence training has even a small chance to equalize the power imbalance between child and abuser, or between adolescent woman and abuser, than this type of training belongs in the school

curriculum.

Even if the training is never used, it may actually be preventing abuse. Leland-Young and Nelson (1987) describe a self-defence program for women designed to prevent and treat sexual assault by re-socializing women in non-victim behavior. The program contains segments on theory, strategy and physical tactics aimed at ending, rather than winning, an encounter. The authors suggest strongly that women who take a self-defence course may actually be deterring attackers before they are aware of the potential problem. They cite research on an attacker's choice of victims which suggests that attackers may pass over non-victim-like women before settling on a passive woman. The authors estimated that women trained in their course were three times less likely to be selected by an assailant than women who had not been trained.

Some research is still needed to clarify the best teaching methods for achieving the particular results desired. Some of the papers reviewed above (Nosanchuk and MacNeil 1989; Kidder et al. 1983) suggest that different teaching styles can give very different results. Kidder and others demonstrated that simply learning the techniques of self defence was not enough to increase the likelihood that they would be used, and some of the reasons for this were outlined in Ozer and Bandura (1990).

It may be necessary to define not only the psychological teaching method or the physical techniques to study, but the correct combination of the two in order to produce superior students. Landers et al. (1986) studied the factors associated with good performance in a group of competitive archers. Most studies of elite athletes have concentrated on psychological measures related to performance, ignoring the physical skills in the assumption that at elite levels they are not different. The authors combined the results of the 16PF test with physical measures to obtain a good prediction of performance. This type of information could be used by coaches to design better programs for better performance. Superior archers were found to have better leg strength, and better reaction times. The most important factors were that they thought less about past mistakes, were successful in using visual imagery, and had high self confidence. Anxiety levels were not related to performance, indicating that at this level, stress is not a factor. Using Bandura's self-efficacy theory (Bandura, 1977), the authors speculate that self confidence (or perceived self efficacy) is the key intervening variable between visual imagery, thinking of past mistakes and performance. Confidence has a mutual relationship with performance, improvements in one bringing about improvements in the other.

Teaching methods for martial arts or self defence classes should take into account these findings. Physical skills should be taught in a graduated manner so that students are constantly exposed to successful performances which will raise their perceived self-efficacy at the same time as their performance improves. Visual imagery can provide a way for students to constantly review and even improve a modeled performance so methods of imaging should be taught as well.

Seaborne (1985) investigated mental training strategies to see if they improved Karate performance. Relaxation, visualization, positive self-instruction, or coping instruction, may all be of use to some who have trouble controlling negative thoughts but not others. Seaborne studied the effects of several approaches to training over a ten week period. Training methods consisted of either individualized programs for each student, or menu type programs (a package approach) allowing students to pick their own strategies. Both methods showed better performance at the end of the period, being superior to both no strategy and randomly assigned strategies. The study underlines the importance of mental work on the control of the mind and thoughts along with physical work on the techniques. Students can pick their own mental training strategy with minimal guidance and obtain the methods they need but providing a strategy to someone who does not need that particular method is not useful.

The value of an instructor who has a range of motivational tools to give to those who need it is obvious. This study looked at physical performance, and found that the psychological state of the performer was important. The psychological and physical effects of martial arts training are not related in only one direction. Studies have shown that physical training affects mental state, and that mental state affects physical performance.

While self defence courses have quite definite goals and results, the martial arts have the potential to teach things other than self-control and self-defence. Which results are desired from the training may influence the training method.

Ken Min (1979) discussed the potential role of martial arts training in the educational setting. Although his comments are concentrated on the Japanese arts and philosophy, using several Japanese terms, his comments could also be applied to other fighting arts and other spiritual traditions.

Min pointed out that the budo are associated with mu, emptiness, "mu is an ego-less state of mind that frees one from fear and failure, even in death." To achieve this state, training in Zen meditation during a martial arts class has tremendous importance. In this respect, a martial arts class can be a "middleman" between the self and the universe.

Most North American Universities concentrate on varsity teams to the detriment of intramural and individual sports training. There are few students involved in these sports consuming the bulk of the available resources. Min proposes that martial arts training can counteract this trend, providing a cheap alternative activity for those who are not varsity athletes. Budo training is increasing in popularity but not supported by the schools, it is not rooted in North American culture. Classes are usually presented by extramural clubs, and sometimes as part of the phys-ed program. Few schools recognize martial arts as varsity sports but most universities have individual competitors and often unofficial school teams. Martial arts classes at universities are usually coed.

Min gives several reasons why the budo are becoming popular. The first is the influence of movies and magazines which present a distorted view of the arts. The second is that they satisfy a need. In the liberal arts curriculum there should be the ideal of building the body and mind in harmony. This should be the goal of physical education in any school, not "the big game". Western sports ideals are not appealing to many, the aggressiveness and team spirit may seem wrong. Budo offers an alternative, providing self-knowledge, self-control, and unity with nature rather than self satisfaction, the defeat of others, and the control of nature.

Budo also offers access to Eastern thought (and philosophy) unencumbered by language and culture. It teaches the five Ss (self-discipline, self-training, self-control, self-confidence, self-respect) as well as the more obvious self-defence. According to Min the most important aspect of martial arts is mental training to allow a calm response to all situations. A group of stable people can provide great assistance to unstable societies. Some of the other social benefits include the possibility of intersexual practice, rather than segregated sports classes, improvements in aesthetics, posture, dance, and the possibility of almost unlimited self-expression.

CONCLUSION

It is our hope that this review of the wide range of research literature, focused on the psychological effects of the fighting arts, will provoke thought, discussion and further research. The literature would seem to support the notion that training in the combat arts will produce psychological change in the student, at least in the short term. How these changes occur, and what the long term effects of training are, is still to be discovered. There seems to be great potential for the use of training in

the combat arts to reduce aggression and assault in our society. The fact that this seems to go against common sense makes further, careful investigation of the subject most important.

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