



# Body Mechanics

Equations for Power		
	<u>Long</u>	<u>Short</u>
Requirements	Requires time and space	½ second, no space
Weighting	Weight Shifts	No Weight Shift
Nature	Power develops over distance	Power diminishes over distance
Structure	Can develop during the issue	Structure must be in place at issue
Conditions	Opponent on balance, or guarded	Opponent off balance or is open
Range	Long range	Short range
Movement	Body moves in space	Body does not move in space
Defense	Jam or change it	Can't jam it, must avoid it
Description	Progression of force	Simultaneous force
Direction	Leg- Waist- Arm	Waist- Arm/Leg equally
Structure	Any, depending on circumstances and opponent	Everything has to be round, and close to the center, like a cartoon bomb or grenade
Adaptation and Control	Can change in middle. <ul style="list-style-type: none"> <li>• <i>Issue is controllable throughout.</i></li> <li>• <i>Either side can change the movement.</i></li> </ul>	Cannot change <ul style="list-style-type: none"> <li>• <i>There really isn't a 'middle'</i></li> <li>• <i>No change by either side is possible.</i></li> </ul>

Types of Movement		
	<u>Pushing</u>	<u>Striking</u>
Character	Power from beginning to end	Dead space in beginning
Effects	Whole movement effects opponent	Only end effects opponent
Physics	Transfer Momentum	Transfer Energy
Equation	$F = MA$	$KE = \frac{1}{2} MV^2$
Goal	Get target to move	Get target to crumple
Target	Use for soft targets	Use for hard targets
Range	From Contact	From Some Distance
Defense	Direct off course, or avoid it	Get out of the way or jam it
Frequency	80% will be Long Push	80% will be Short Explosion
Timing	Contact Before Issue <i>If in contact with target during issue, then movement becomes a push.</i>	Issue Before Contact <i>If issue occurs before contact, result will be a strike.</i>
Example	Pushing a car out of a ditch	Throwing a ball

Combining Long, Short, Pushing, and Striking		
	Long	Short
<u>Pushing</u>	Push* <i>Pushing through a target with a fist brings a 'punch' into this category</i>	Strike from contact <i>Some characteristics of a push, but mostly follows rules of striking</i>
<u>Striking</u>	Strike from long range <i>Impact only. See Long Push for pushing through a target.</i>	Strike from close range** <i>Impact only. See Long Push for pushing through a target</i>
<p>* T.T. Liang: Pushing with Long Power is highest form, as has most factors to control and adapt to.</p> <p>** Wai Lun Choi: Explosion with Short Power is highest form due to highest speed, smallest time, and requires the most skill to defend. (needs skin sensitivity, as eye cannot follow)</p>		



# Body Mechanics

Classes of Movement	
Step	Connection
<b>Fixed Step:</b> <i>Always Rooted, No Travel</i> <i>Examples: Taiji, Hung Gar*</i>	<b>Isolated: No Flow</b> Example: Single Chain Links Each piece is an island, no interaction with the rest. Each piece or count is totally self contained. Task: Learning
<b>Active Step:</b> <i>Issue Causes Travel, Breaks Root</i> <i>Example: Hsing-I*</i>	<b>Linked: Limited Flow</b> Example: Length of Chain Individual pieces are connected in small sequences. Each piece retains it's own identity, and any broken link destroys the whole chain. See definition of 'Lianhuan'. Task: Application
<b>Floating Step:</b> <i>Always Traveling, No Root</i> <i>Example: Bagua*</i>	<b>Continuous: Total Flow</b> Example: Rope or Cable No breaks in the movement or structure. To break the cable, you must break every fiber. Task: Mastery
*Note that while the above examples are the styles that made the given step famous, every complete system must cover all 3 Steps, as well as all 3 Connections	

Scale, 'Powers', & Tactics			
	Passive	Neutral	Active
<b>Big (Obvious, 'Ming')</b>	Big/ Passive (Run Away)	Big/ Neutral (Iron Shirt)	Big/ Active (Issuing, Striking, Pushing)
<b>Small (Hidden, 'Nam')</b>	Small/ Passive (Dodge or Slip)	Small/ Neutral (Rooting)	Small/ Active (Encroaching, Stealing Time or Space)
<b>Invisible (Changeable, 'Fa')</b>	Invisible/ Passive (Willow, Micro Slip)	Invisible/ Neutral (1 Foot Root)	Invisible/ Active ('Inch Power')
<ul style="list-style-type: none"> <li>● All techniques are easiest to learn when they are big and obvious</li> <li>● All techniques are most applicable when they are small</li> <li>● All styles approach invisibility as the practitioner progresses</li> <li>● No matter what the style or the preference, the complete practitioner should understand every entry on the chart, and be able to use the technique if the necessity arises.</li> </ul>			

Sources of Power		
Class	Type	Source
Horizontal	Any turning motion or moving sideways	Waist
Vertical	Any motion forward, backward, up, down	Legs