

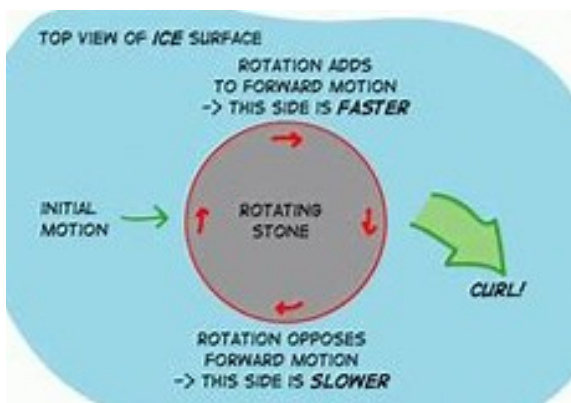
The Spin Doctor is

IN

OUT

The simple answer to the dynamic motion and trajectory of a curling stone lies somewhere in the frictional interaction between the running band and pebbles on the ice (not discounting the effect of the sheet in question's topography, dealt with in a previous blog).

A clockwise rotation (an 'In-turn' for a right-handed player) will cause the stone to curl left to right as it travels down the sheet. A counter-clockwise rotation (an 'Out-turn' for a right-handed player) will cause the stone to curl right to left).



The following models have been proposed to explain this phenomenon:

- The Pressure Difference Model
- The Water Level Model
- The Snowplow Model
- The Evaporation Abrasion Model
- The Scratch Guide Model
- The Pivot-Slide Model
- The Split Friction Model

According to a recent study¹, to date there is no unanimous agreement to fully explain the lateral motion of a curling stone.

NB: The faster a stone travels, the less effect spin will have on overall lateral (sideways) movement.

Previously, it was recommended that the thrower's release should cause the rock to rotate 2 ½ to 3 complete turns before coming to rest. Some have postulated that more rotation (e.g. 5-6 turns) would provide a more predictable travel path for the curling stone.

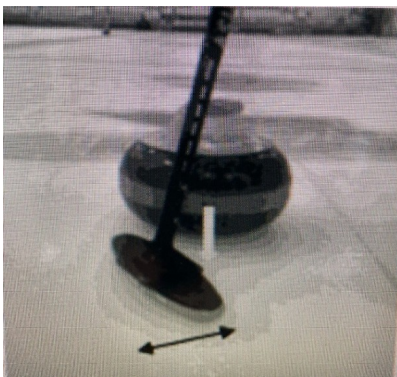
With regards to sweeping, the following briefly outlines two current models:

- 1) The ***ThermoMechanical Theory*** considers the impact of the velocity of the sweeping stroke; the downward force applied; and the sweeping pattern on the coefficient of friction.
- 2) The ***Scratch Mechanism*** examines changes to the ice surface caused by the brush head motion and the resultant directional manipulation of the stone's trajectory.

Once again, opinion is divided in terms of which of the above best supports the impact sweeping technique may have on rock movement.

Broom head stroke displacement strategies also provides fertile ground for debate.

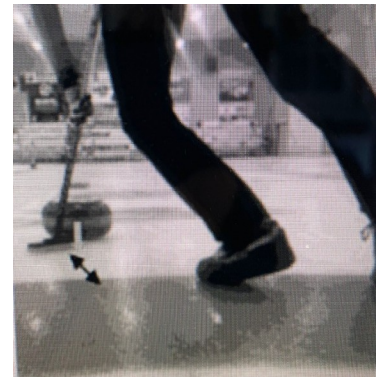
The following illustrates some of the current strategies.



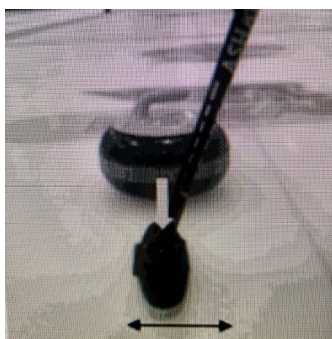
Corner Sweeping



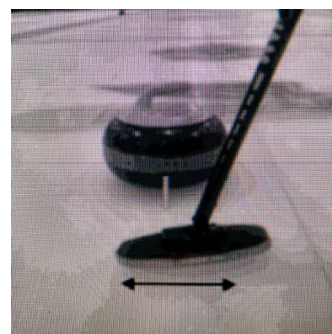
Snow Plowing



Backward Sweeping



Horizontal broom head



Vertical broom head

From the warm side of the glass Denis Faubert