Third Law of Motion:

When a body meets another, if it has less force [vim] to continue to move in a straight line than the other has to resist it, it is turned aside in another direction, retaining its quantity of motion and changing only the direction of motion. If, however, it has more force, it moves the other body with it, and loses as much of its motion as it gives to that other.

The version in *Le Monde*:

When one of these bodies pushes another, it cannot give the other any more motion except by losing as much of its own at the same time; nor can it take away from the other body's motion unless its own is increased by as much.

Motion = *bulk* (Lat. *moles*) × *speed*

***Descartes' issue*: how is the total motion across the entire universe maintained at the same level when local motions change? ("*ubi corpus quod movetur alteri occurrit*")**

- **Case 1: perfectly elastic reflection, with no change in the amount of motion of either of the bodies in contact.**
- **Case 2: transfer of a quantity of motion from the body with the greater force to resist to the body in contact with it.**

That is, the change in motion is always local.

Transfer of Motion upon Impact

In order to determine, from the preceding laws, how individual bodies increase or decrease their movements or turn aside in different directions because of encounters with other bodies, it is only necessary to calculate how much force to move or to resist movement there is in each body, and to accept as a certainty that the one which is the stronger will always produce its effect. Moreover, this could easily be calculated if only two bodies were to come in contact, and if they were perfectly solid, and separated from all others {both solid and fluid} in such a way that their movements would be neither impeded nor aided by any other surrounding bodies; for then they observe the following rules.

$$(bulk_1 \times speed_1 + bulk_2 \times speed_2)_{before} = (bulk_1 \times speed_1 + bulk_2 \times speed_2)_{after}$$

? $\Delta(bulk_i \times speed_i)$ **is a measure of the excess force on body** i **?**