

Sir Isaac Newton:  
PHILOSOPHIÆ NATURALIS PRINCIPIA MATHEMATICA.

DEFINITIO IV.

Vis impressa est actio in corpus exercita, ad mutandum ejus statum vel quiescendi vel movendi uniformiter in directum.

DEFINITION 4.

*An impressed force is an action exerted on a body, in order to change its state of either rest or moving uniformly along a straight line.*

LEX II.

Mutationem motus proportionalem esse vi motrici impressæ, & fieri secundum lineam rectam qua vis illa imprimitur.

LAW 2.

*The change of motion is proportional to the driving force impressed on it, & it takes place along the straight line by which that force is impressed.*

LEX III.

Actioni contrariam semper & æqualem esse reactionem : sive corporum duorum actiones in se mutuo semper esse æquales & in partes contrarias dirigi.

LAW 3.

*To every action there always is a contrary & equal reaction : or the actions of two bodies upon each other are always equal & in opposite directions.*

Henk Reints:

*Force on a single body is a meaningless concept.*

*A force is exerted by one body on another body.*

Two bodies suffice, so *force* is — in that regard — a *local* quantity, i.e. it has no need for the rest of the universe.

*Acceleration = force per mass;*  
an exerted force implies a body's change of motion.

Ergo: *acceleration* does not need the rest of the universe, hence it is absolute.