

A **thing** is an entity that is able to interact with another **thing**.

An **event** is an interaction between **things**.

A **thing** or **event** is elementary if it cannot be divided into other **things** or **events**.

But does that imply it has no details (like a Prime Meridian)?

Each **event** results from one or more other **events**.

**Time** is the chain of elementary **events**.

**FULL STOP.**

# Length contraction by whatever cause.

**Suppose you cycle a road from  $A$  to  $B$ .**

When looking forward when still  $@A$ ,  
the *entire* road appears to be 1000 m long.

When you're halfway, so after having cycled 500 m,  
the *entire* road suddenly contracts by a factor of 2,  
leaving a remaining distance of merely 250 m.

The total cycled distance ultimately becomes 750 m.

But when looking back from  $B$  to  $A$  on arrival  $@B$ ,  
the *entire* road measures merely 500 m.

Look ahead <sup>1</sup> :	<b>@single loc. &amp; single pnt. in time:</b>	$A \rightarrow B =$	1000 m;
look back <sup>2</sup> :	<b>@single loc. &amp; single pnt. in time:</b>	$B \leftarrow A =$	500 m;
travelled <sup>3</sup> :	<b>length interval during time span:</b>		750 m.

750 m *never* length of road. Property of combi. of road & bicycle.

**In all frames: cycled distance  $\neq$  street length!**



USING MULTIPLE STANDARDS!



<https://www.istockphoto.com/nl/foto/apple-to-orange-gm178972681-25136226>

<sup>1</sup> In  $A$ 's frame; <sup>2</sup> in  $B$ 's frame; <sup>3</sup> in cyclist's frame.

<https://www.bipm.org/en/measurement-units>

## The International System of Units (SI).

The unperturbed ground state hyperfine transition frequency of the caesium-133 atom  $\Delta\nu_{\text{Cs}}$  is 9 192 631 770 Hz.

*So isn't the **second** a counted number of **events**?*

*If we define the **UNIT** of **TIME** as a no. of **events**, then how should we best define **LENGTH**?*

Had we measured the road length as a number of **things**, (e.g. road side marker posts) it would have been an ***intrinsic property of the road*** that does ***not change*** in any way.

*No. of bottom bracket revolutions (NL: trapasomwentelingen) per Inter Marker Post Distance would then still not be constant. However, that's not a property of the road, nor of your bicycle, but of their combination.*