Opening an Antonym

We can treat ToOpen and ToClose as antonyms of each other, as long as there is appropriate context.

If we have a door, but no wall, or a gate and gateposts but no fence, then opening the door or gate has no meaning – you could walk around the obstacle.

Similarly, if you open the door and find the doorway bricked up so you cannot enter, then the operation of opening the door has no meaning.

How do we represent the context, so the operation has meaning?

He opened the door – there was an obstacle – a wall – and opening the door now allows passage. If passage was possible without the door being opened (at near enough the same spot – not another door), or passage is still not possible with the door open (through the immediate obstacle – not another wall at some distance from the first), then "he opened the door" failed as an operation – the operation did not allow passage that was otherwise unavailable. How do we represent this situation?

The door is a component of something which prevents passage – that is how the door gets its meaning.

> The wall exists
>
> The door exists.
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> The door is part of the wall (the doorway is "in" the wall).
>
> Opening the door produces an aperture in the wall, through which objects can pass.

We probably need a better understanding of door-doorway-wall.

If we say that a room is an enclosure (as is a building), and enclosures (not enclosures in envelopes) have entry points, and a doorway is an entry point, and a door can open or close an entry point, then we can handle the logic of the following.

He opened the front door.
He opened the door leading to the kitchen.
The door between the kitchen and the lounge room was open.
He went through the open door. (he went through the doorway of the open door)
The arrow went through the door (it really did go through the door)
The cupboard door was open. (a cupboard is an enclosure)
The gate was open. (a gate implies a partial enclosure – no roof)

Doors can be made of wood or metal or glass or any combination.

There are double doors, French doors, revolving doors, sliding doors, trapdoors (implies horizontal surface).

You can open and shut a valve – a valve is an enclosure with several entry (and exit) points. The closing of the valve is the same as the closing of the door – it prevents passage. A valve can be partially open or closed, and the setting can be finely controlled – there are different types of valves

Shutoff valve (either open or closed)
Check valve (prevents flow in one direction)
Flow control valve
Safety valve (opens at some preset value)