

# Understanding & intelligibility

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# Explanation as an epistemic aim of science

1. Unsupported objects fall down. [General law]
2. I left the ball unsupported. [Particular fact]
3. The ball fell down. [Conclusion/Phenomenon to be explained]



How did we know which law to use?  
Is there a law for applying laws?



Science cannot reach its  
epistemic aims without a certain  
“pragmatic understanding”  
which cannot be made explicit.



A theory needs to be *intelligible*.

# What makes intelligibility so special?

	1																	18
1	1 H												13	14	15	16	17	2 He
2	3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
3	11 Na	12 Mg	3	4	5	6	7	8	9	10	11	12	13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
6	55 Cs	56 Ba	*	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
7	87 Fr	88 Ra	**	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Nh	114 Fl	115 Mc	116 Lv	117 Ts	118 Og
Lanthanides*			57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu	
Actinides**			89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr	

Is intelligibility a property of the periodic table?

It is a holistic property of the situation/context in which the periodic table is embedded.

To call *an* entity intelligible is meaningless.

# A Heideggerian digression

## Modes of understanding



*Vorhandenheit*



*Zuhandenheit*

The important point is that both these modes of understanding ground each other.



# Has science lost sight of objectivity?

Not if we give up a value-free notion of objectivity.

*"I will take the ascription of objectivity as a shorthand way of telling others that a claim is likely to be trustworthy, given the processes that produced it."* –Heather Douglas

So long as we ensure that values enter the picture only *after* evidence fails to speak unambiguously, our explanations are trustworthy.

# THANK YOU!

