

# Research Epistemologies

## Lecture 2

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# What is Epistemology?

- Epistemology is the theory of knowledge... knowing about knowing!
- It is concerned with the nature and scope of knowledge:
  - It enquires into what knowledge is, how it is acquired, and the possible extent a given subject can be known.
- How do we know what we do know? What means are suitable to acquire knowledge?

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## Epistemological Approaches



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# Positivism

- 'Naïve Realism' – a single unitary world that can be accessed objectively through the scientific method.
- The scientist can stand 'outside' this real world and observe it without bias.
- Things out-there are measurable and quantifiable! What is measurable is reliable!
- Hence focus on quantitative methods.
- Objective facts accumulate to support universal laws; and the purpose of science is to establish universal laws.
- Facts can be separated from values and experiences.

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# The Periodic Table

1 H																	18 Ar																	
2 He																	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
3 Li	4 Be											11 Na	12 Mg	13 Al	14 Si	15 P	16 S	17 Cl	18 Ar															
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																	
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																	
55 Cs	56 Ba	57-71 La	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																	
87 Fr	88 Ra	89-103 Ac	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Nh	114 Fl	115 Uut	116 Lv	117 Uu	118 Og																	
89 La	90 Ce	91 Pr	92 Nd	93 Pm	94 Sm	95 Eu	96 Gd	97 Tb	98 Dy	99 Ho	100 Er	101 Tm	102 Yb	103 Lu	104 Hf	105 Ta	106 W																	
91 Pr	92 Nd	93 Pm	94 Sm	95 Eu	96 Gd	97 Tb	98 Dy	99 Ho	100 Er	101 Tm	102 Yb	103 Lu	104 Hf	105 Ta	106 W	107 Re	108 Os																	
93 Pm	94 Sm	95 Eu	96 Gd	97 Tb	98 Dy	99 Ho	100 Er	101 Tm	102 Yb	103 Lu	104 Hf	105 Ta	106 W	107 Re	108 Os	109 Ir	110 Pt																	
95 Eu	96 Gd	97 Tb	98 Dy	99 Ho	100 Er	101 Tm	102 Yb	103 Lu	104 Hf	105 Ta	106 W	107 Re	108 Os	109 Ir	110 Pt	111 Au	112 Hg																	
97 Tb	98 Dy	99 Ho	100 Er	101 Tm	102 Yb	103 Lu	104 Hf	105 Ta	106 W	107 Re	108 Os	109 Ir	110 Pt	111 Au	112 Hg	113 Tl	114 Pb																	
99 Ho	100 Er	101 Tm	102 Yb	103 Lu	104 Hf	105 Ta	106 W	107 Re	108 Os	109 Ir	110 Pt	111 Au	112 Hg	113 Tl	114 Pb	115 Bi	116 Po																	
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103 Lu	104 Hf	105 Ta	106 W	107 Re	108 Os	109 Ir	110 Pt	111 Au	112 Hg	113 Tl	114 Pb	115 Bi	116 Po	117 At	118 Rn	119 Fr	120 Ra																	
105 Ta	106 W	107 Re	108 Os	109 Ir	110 Pt	111 Au	112 Hg	113 Tl	114 Pb	115 Bi	116 Po	117 At	118 Rn	119 Fr	120 Ra	121 Ac	122 Th																	
107 Re	108 Os	109 Ir	110 Pt	111 Au	112 Hg	113 Tl	114 Pb	115 Bi	116 Po	117 At	118 Rn	119 Fr	120 Ra	121 Ac	122 Th	123 Pa	124 U																	
109 Ir	110 Pt	111 Au	112 Hg	113 Tl	114 Pb	115 Bi	116 Po	117 At	118 Rn	119 Fr	120 Ra	121 Ac	122 Th	123 Pa	124 U	125 Np	126 Pu																	
111 Au	112 Hg	113 Tl	114 Pb	115 Bi	116 Po	117 At	118 Rn	119 Fr	120 Ra	121 Ac	122 Th	123 Pa	124 U	125 Np	126 Pu	127 Am	128 Cm																	
113 Tl	114 Pb	115 Bi	116 Po	117 At	118 Rn	119 Fr	120 Ra	121 Ac	122 Th	123 Pa	124 U	125 Np	126 Pu	127 Am	128 Cm	129 Bk	130 Cf																	
115 Bi	116 Po	117 At	118 Rn	119 Fr	120 Ra	121 Ac	122 Th	123 Pa	124 U	125 Np	126 Pu	127 Am	128 Cm	129 Bk	130 Cf	131 Es	132 Fm																	
117 At	118 Rn	119 Fr	120 Ra	121 Ac	122 Th	123 Pa	124 U	125 Np	126 Pu	127 Am	128 Cm	129 Bk	130 Cf	131 Es	132 Fm	133 Md	134 No																	
119 Fr	120 Ra	121 Ac	122 Th	123 Pa	124 U	125 Np	126 Pu	127 Am	128 Cm	129 Bk	130 Cf	131 Es	132 Fm	133 Md	134 No	135 Lr	136 Uu																	
121 Ac	122 Th	123 Pa	124 U	125 Np	126 Pu	127 Am	128 Cm	129 Bk	130 Cf	131 Es	132 Fm	133 Md	134 No	135 Lr	136 Uu	137 Uub	138 Uuq																	
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125 Np	126 Pu	127 Am	128 Cm	129 Bk	130 Cf	131 Es	132 Fm	133 Md	134 No	135 Lr	136 Uu	137 Uub	138 Uuq	139 Uuq	140 Uuq	141 Uuq	142 Uuq																	
127 Am	128 Cm	129 Bk	130 Cf	131 Es	132 Fm	133 Md	134 No	135 Lr	136 Uu	137 Uub	138 Uuq	139 Uuq	140 Uuq	141 Uuq	142 Uuq	143 Uuq	144 Uuq																	
129 Bk	130 Cf	131 Es	132 Fm	133 Md	134 No	135 Lr	136 Uu	137 Uub	138 Uuq	139 Uuq	140 Uuq	141 Uuq	142 Uuq	143 Uuq	144 Uuq	145 Uuq	146 Uuq																	
131 Es	132 Fm	133 Md	134 No	135 Lr	136 Uu	137 Uub	138 Uuq	139 Uuq	140 Uuq	141 Uuq	142 Uuq	143 Uuq	144 Uuq	145 Uuq	146 Uuq	147 Uuq	148 Uuq																	
133 Md	134 No	135 Lr	136 Uu	137 Uub	138 Uuq	139 Uuq	140 Uuq	141 Uuq	142 Uuq	143 Uuq	144 Uuq	145 Uuq	146 Uuq	147 Uuq	148 Uuq	149 Uuq	150 Uuq																	
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## Social Constructionism

- There is no unitary 'real world'. There are only socially constructed worlds. The notion of 'reality' is itself a social construct.
- All perspectives are equally valid (at least potentially).
- The scientist is a participant in her socially constructed world.
- Quantitative methods further a particular power agenda and give an illusion of objectivity.
- Collective descriptions based on participant observation could eventually accumulate to provide a meta-view (theory) of reality!

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## Critical Realism

- There may be a single unitary world but this cannot be accessed objectively through the scientific method;
- The scientist cannot stand 'outside' this real world. S/he is a participant in it and can never completely eliminate bias;
- Quantitative methods can help a lot but the theories and research questions are vulnerable to bias and agendas, especially in human and social sciences.
- Scientific theories are cognitive constructs provisional explanations of observations.
- Facts cannot be easily separated from values!

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## Grounded Theory

- Developed since 1965 by Glaser & Strauss;
- Glaser & Strauss (1967). *The discovery of grounded theory*.
- Grounded Theory =
  - Columbia University Positivism
  - Chicago school's pragmatism & field research
- Goes beyond description to generation of "explanatory theoretical frameworks".
- Aims at constructing middle-range theories (Merton).

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## Grounded Theory

"Stated simply grounded theory methods consist of systematic yet flexible guidelines for collecting and analysing qualitative data to construct theories 'grounded' in the data themselves"

(Chamaz, 2006. *Constructing grounded theory: A practical guide through qualitative analysis*. CA, Thousand Oaks: Sage, p.2).

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## How is theory generated in grounded theory approach? Ans: Through 'Coding'

"Coding means that we attach labels to segments of data that depict what each segment is about. Coding distils data, sorts them, and gives us a handle for making comparisons with other segments off the data."

(Chamaz, 2006. *Constructing grounded theory: A practical guide through qualitative analysis*. CA, Thousand Oaks: Sage, p.3).

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