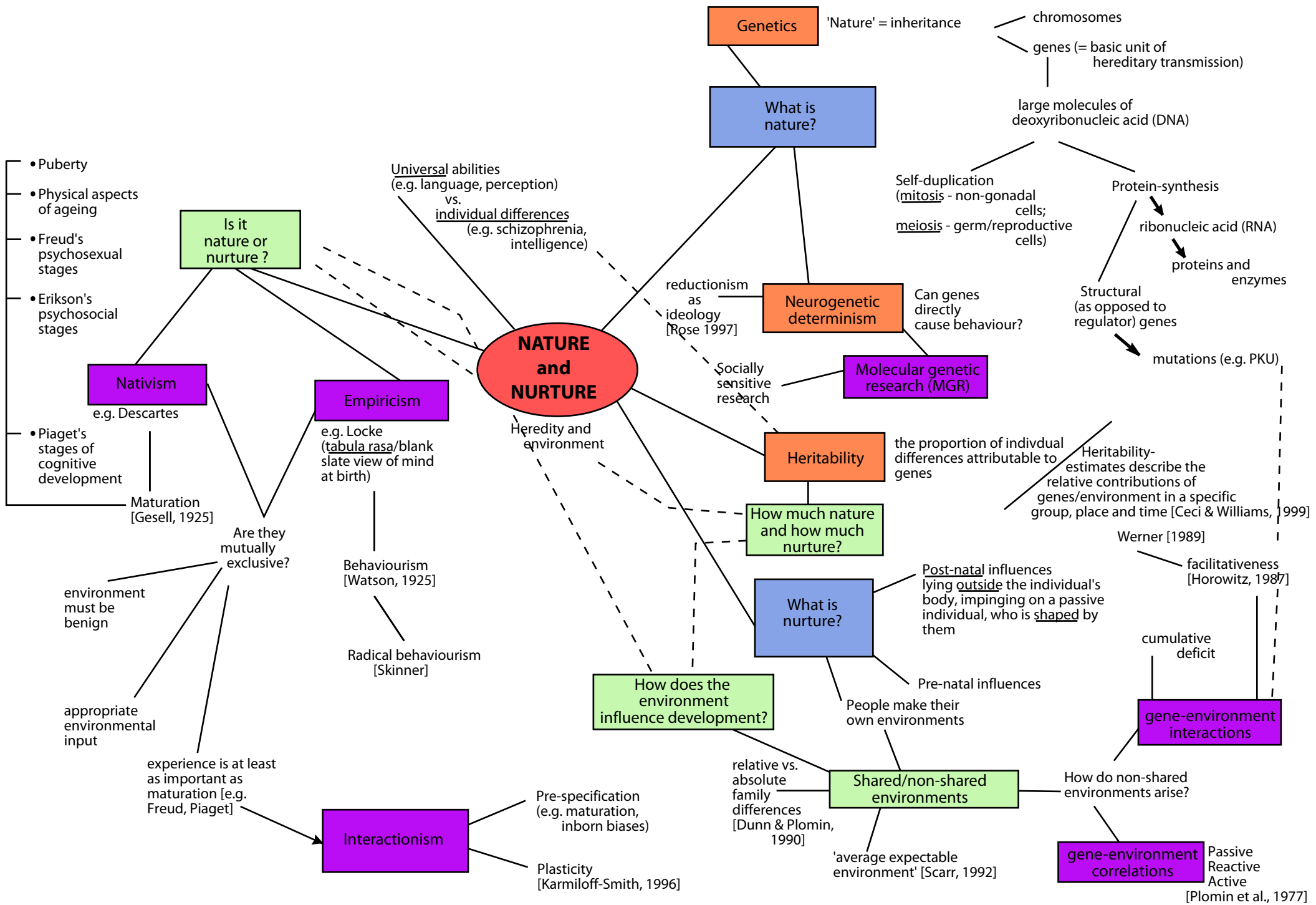
NATURE and NURTURE
Genetics
'Nature' = inheritance
chromosomes
genes (= basic unit of hereditary transmission)
large molecules of deoxyribonucleic acid (DNA)
What is nature?
Self-duplication (mitosis - non-gonadal cells; meiosis - germ/reproductive cells)
Protein-synthesis
ribonucleic acid (RNA)
proteins and enzymes
Structural (as opposed to regulator) genes
mutations (e.g. PKU)
Universal abilities (e.g. language, perception) vs. individual differences (e.g. schizophrenia, intelligence)
reductionism as ideology [Rose 1997]
Neurogenetic determinism
Can genes directly cause behaviour?
Molecular genetic research (MGR)
Socially sensitive research
Heritability
the proportion of indivdual differences attributable to genes
Heritability- estimates describe the relative contributions of genes/environment in a specific group, place and time [Ceci & Williams, 1999]
Heredity and environment
How much nature and how much nurture?
Is it nature or nurture ?
• Puberty
• Physical aspects of ageing
• Freud's psychosexual stages
• Erikson's psychosocial stages
• Piaget's stages of cognitive development
Nativism
e.g. Descartes
Maturation [Gesell, 1925]
Empiricism
e.g. Locke (tabula rasa/blank slate view of mind at birth)
Behaviourism [Watson, 1925]
Radical behaviourism [Skinner]
Are they mutually exclusive?
environment must be benign
appropriate environmental input
experience is at least as important as maturation [e.g. Freud, Piaget]
Interactionism
Pre-specification (e.g. maturation, inborn biases)
Plasticity [Karmiloff-Smith, 1996]
Werner [1989]
facilitativeness [Horowitz, 1987]
cumulative deficit
gene-environment interactions
What is nurture?
Post-natal influences lying outside the individual's body, impinging on a passive individual, who is shaped by them
Pre-natal influences
People make their own environments
How does the environment influence development?
Shared/non-shared environments
relative vs. absolute family differences [Dunn & Plomin, 1990]
'average expectable environment' [Scarr, 1992]
How do non-shared environments arise?
gene-environment correlations
Passive
Reactive
Active
[Plomin et al., 1977]