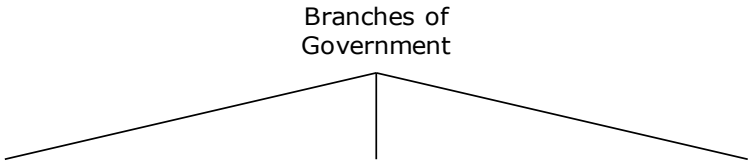
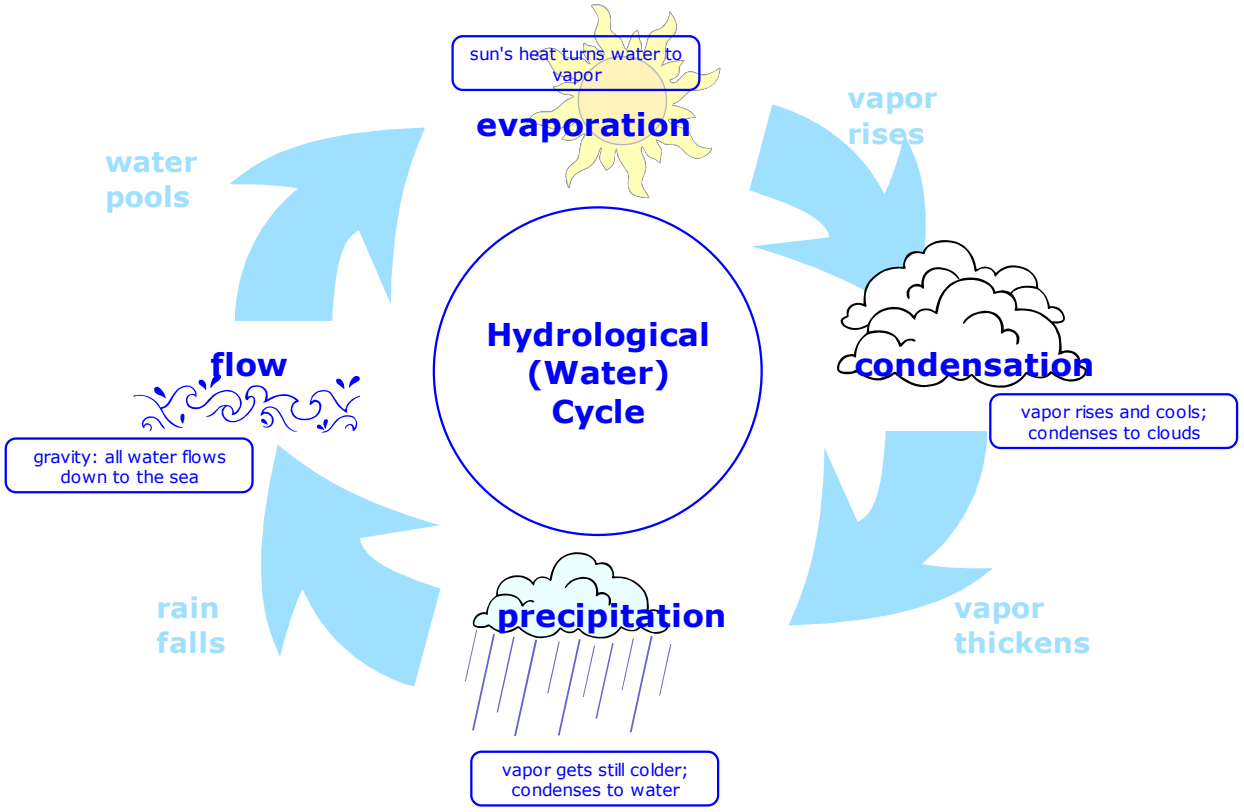
Branches of Government (U.S.A.)

I.	Executive Branch		
	A.	Represented by:	President
	B.	Powers:	Can recommend legislation; veto legislation; appoint judges
	C.	Length of term:	4 years; maximum term 8 years
II.	Legislative Branch		
	A.	Represented by:	Congress
	B.	Powers:	Can enact legislation; override veto; reject and impeach judges; impeach President
	C.	Length of term:	2 years (House of Representatives) or 6 years (Senate); no maximum term
III.	Judicial Branch		
	A.	Represented by:	Supreme Court and other federal courts
	B.	Powers:	Can declare legislation unconstitutional
	C.	Length of term:	life

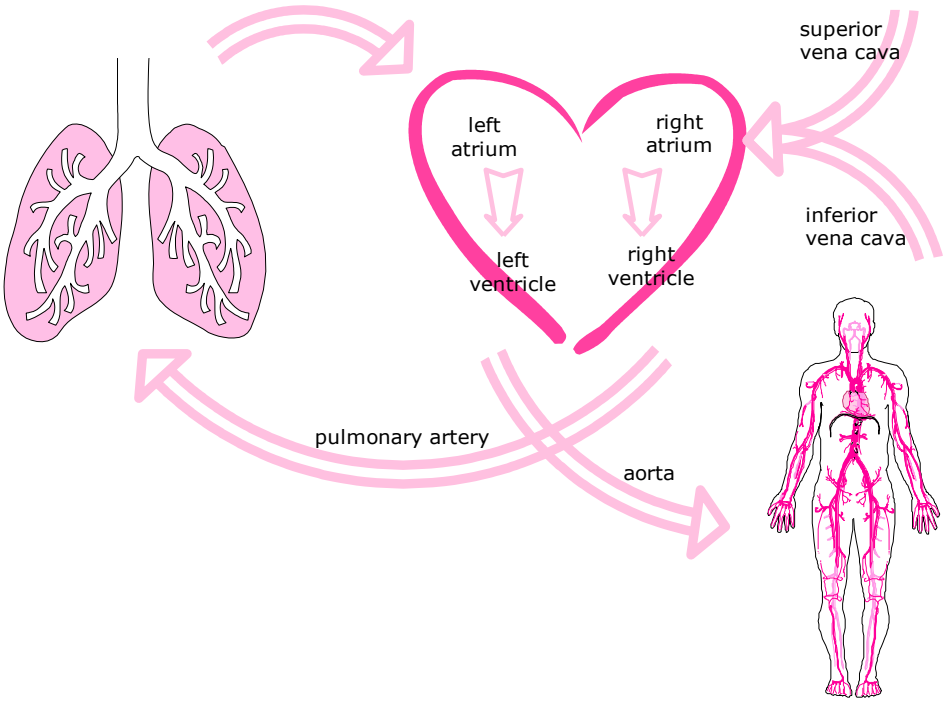


	Executive	Legislative	Judicial
Represented by:	President	Congress	Supreme Court
Term:	4 years	2 or 6 years	for life
Powers:	Can recommend legislation; veto legislation; appoint judges	Can make legislation; override veto; reject judges	Can declare legislation unconstitutional

	Executive Branch	Legislative Branch	Judicial Branch
Represented by	President	Congress	Supreme Court
Term	4 years	2 or 6 years	Life
Powers	Can recommend legislation; veto legislation; appoint judges	Can enact legislation; override veto; reject and impeach judges; impeach President	Can declare legislation unconstitutional

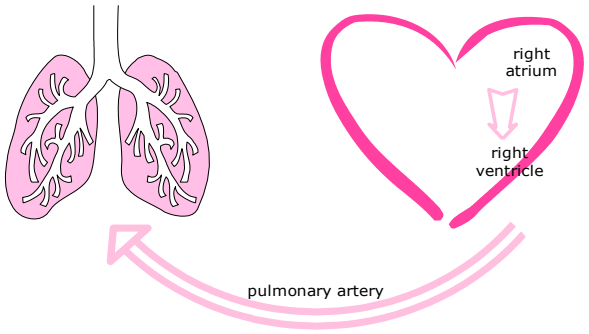


The circulation of blood in the human body

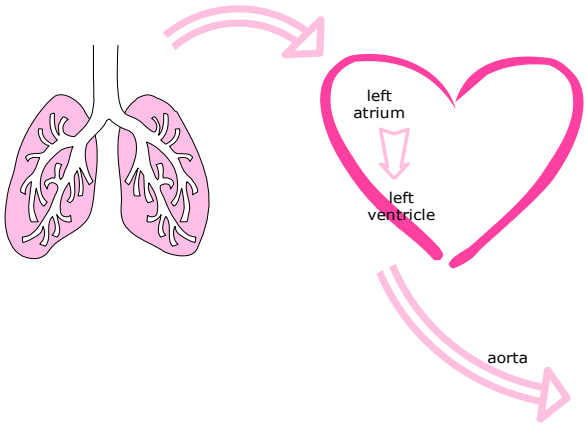


When the right atrium is filled with blood, it contracts, pushing the blood into the right ventricle, which then contracts, pushing the blood into the pulmonary artery.
The pulmonary artery carries the blood to the lungs, where carbon dioxide and oxygen are exchanged.
The blood is then carried by the pulmonary veins back to the left atrium.
The left atrium fills with blood, then contracts, pushing the blood into the left ventricle, which then contracts, pushing the blood into the aorta.
The aorta branches into many smaller arteries, that carry the fresh, oxygenated blood through the body. Finally, the blood reaches the capillaries, where the oxygen and nutrients carried by the blood are released. The de-oxygenated blood now enters the veins, to travel back to the heart and begin its journey once more.

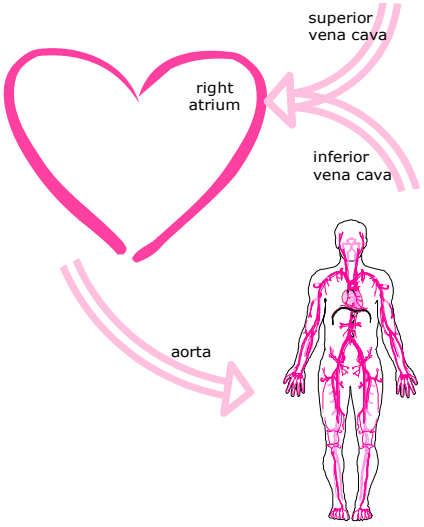
The circulation of blood in the human body



Blood moves from the right atrium to the right ventricle, and from there to the pulmonary artery.

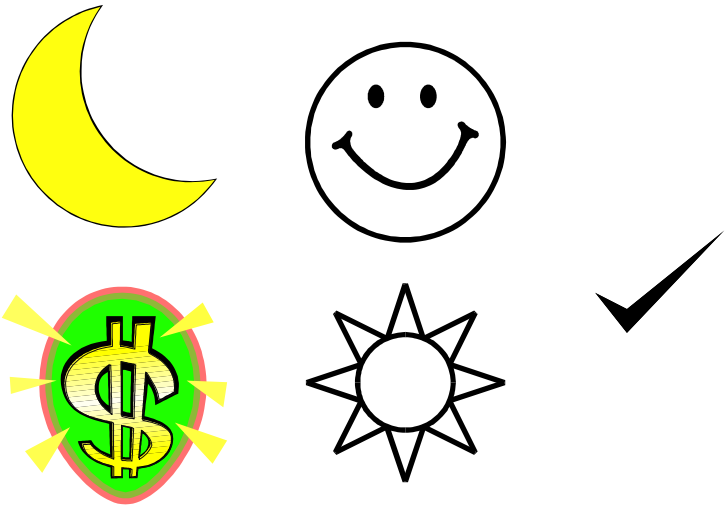


Blood moves from the lungs via the pulmonary veins, to the left atrium. From the left atrium, blood moves to the left ventricle, and from there to the aorta.

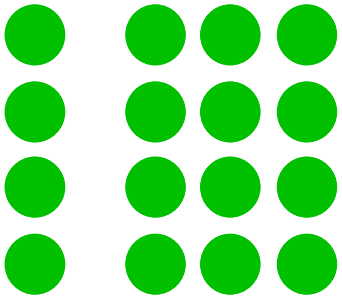


The aorta branches into many smaller arteries, and from there to the capillaries, where oxygen is released. The de-oxygenated blood enters the veins, to travel back to the heart and begin its journey once more.

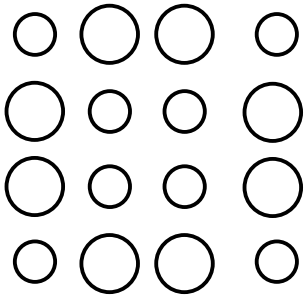

bank
carpark
school
jail
church
deer park

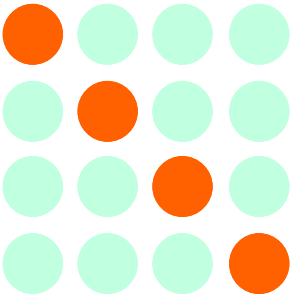


1. **Proximity**

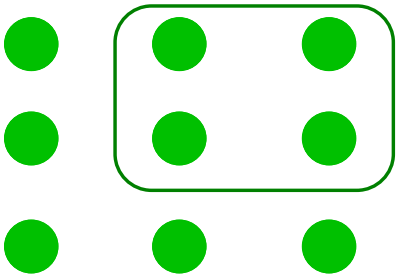


2. **Similarity**

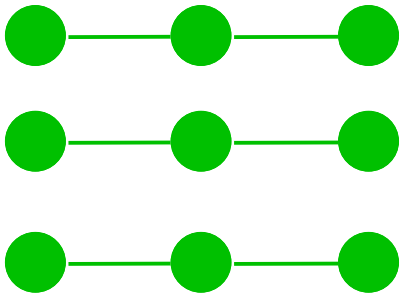




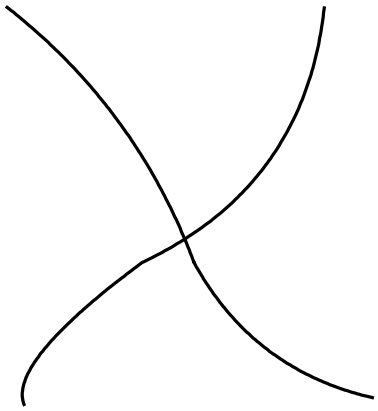
3. **Common region**



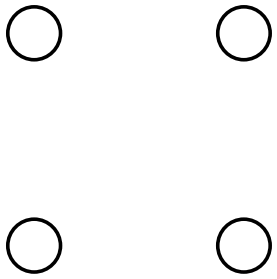
4. **Connectedness**



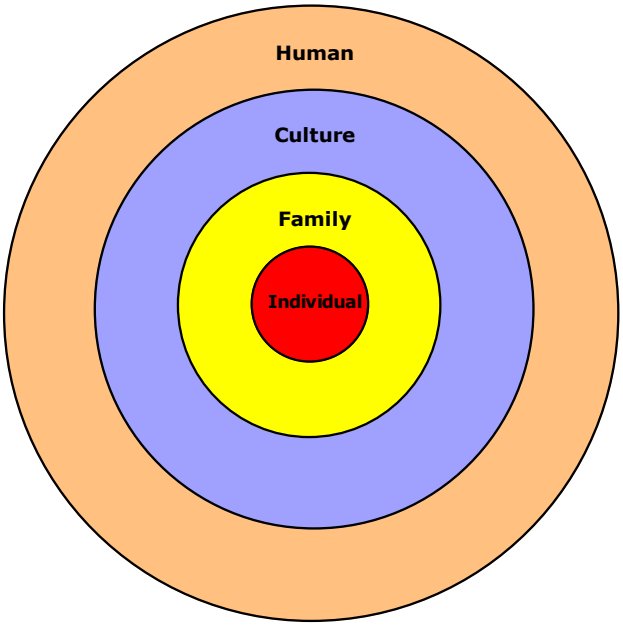
5. **Continuation**



6. **Closure**



Concentric



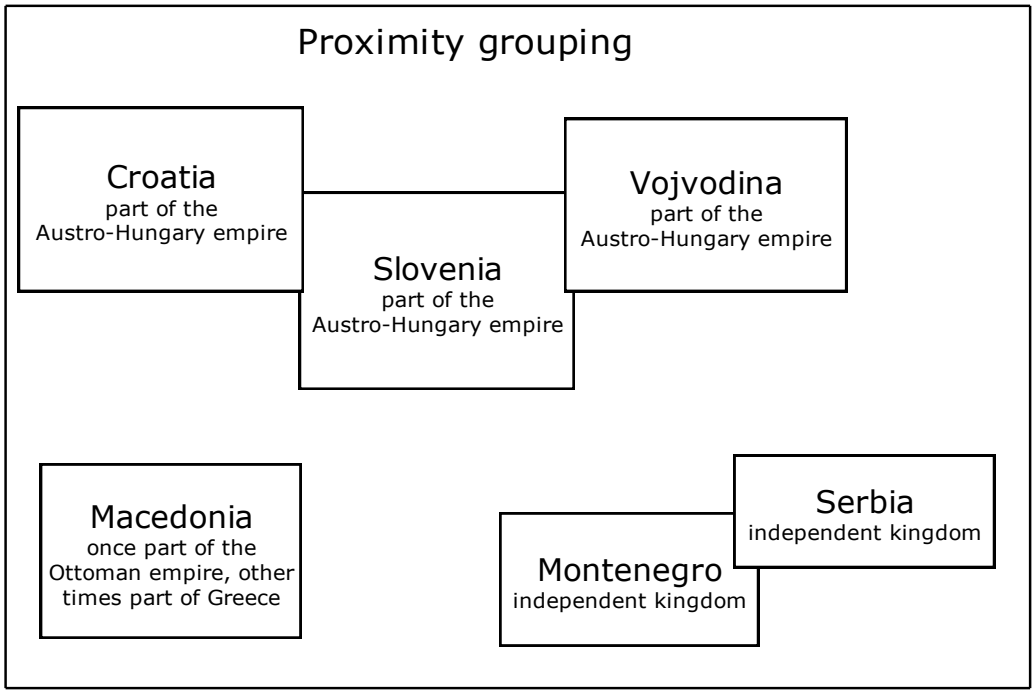
Level

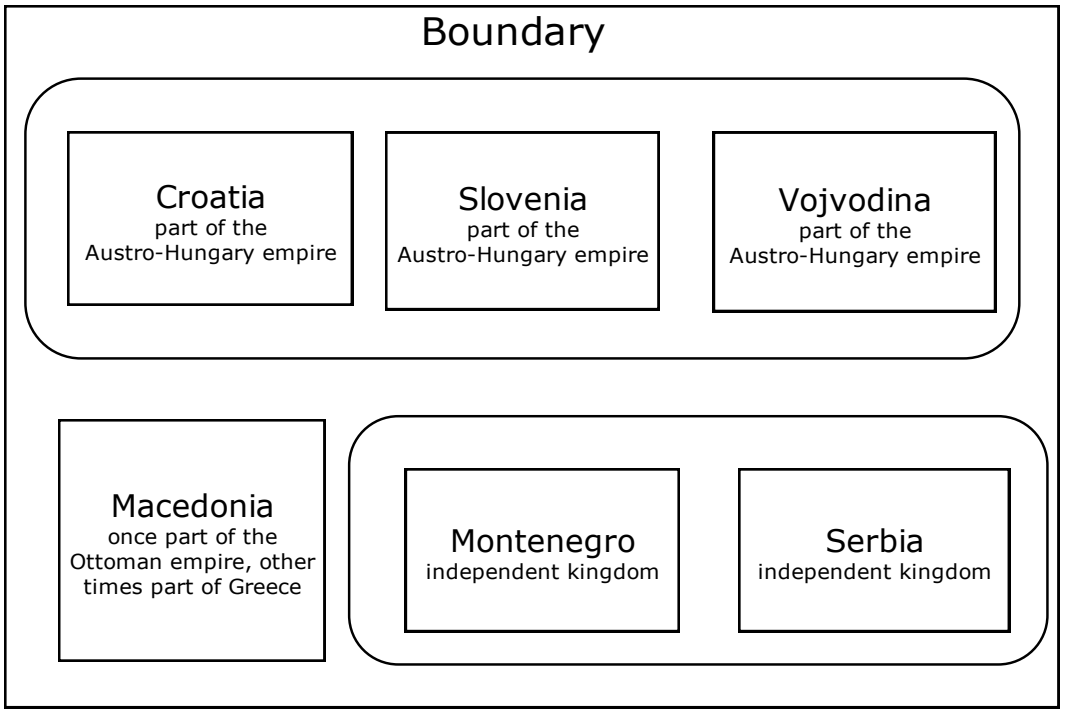
Human

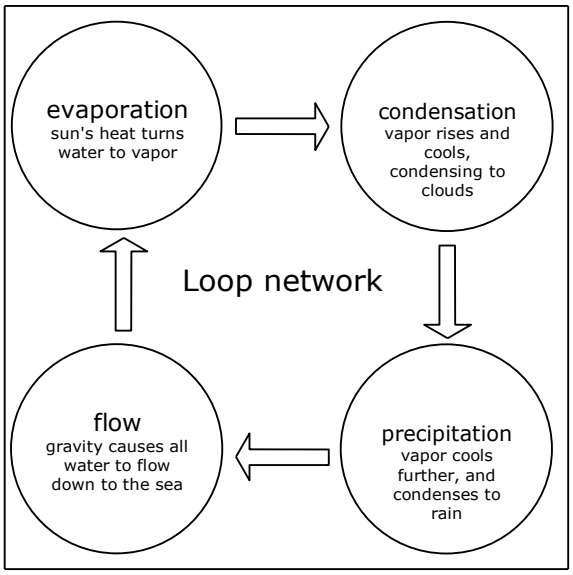
Culture

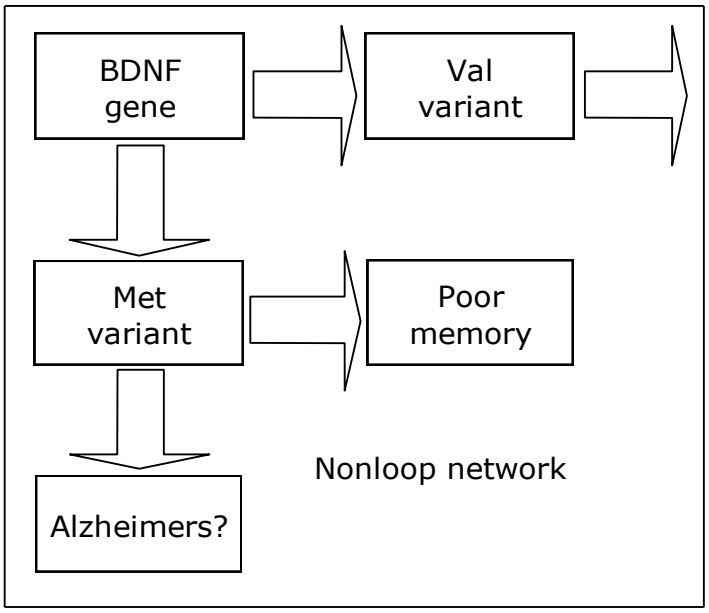
Family

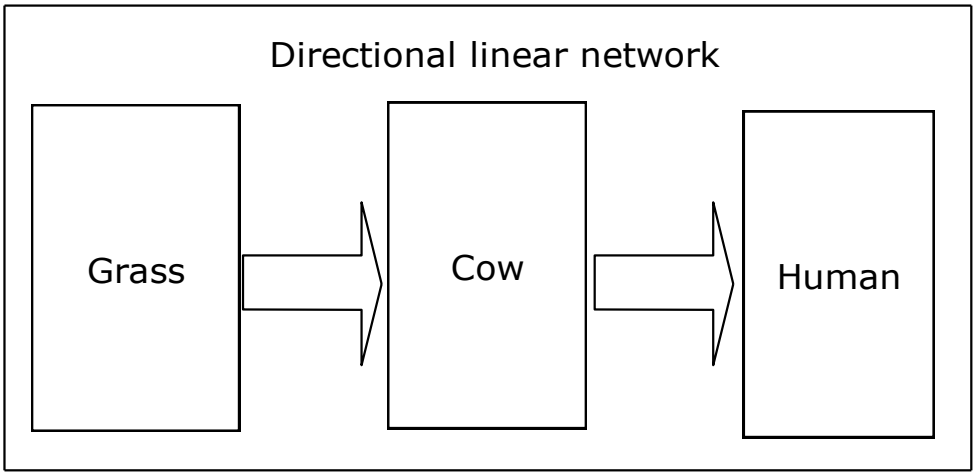
Individual

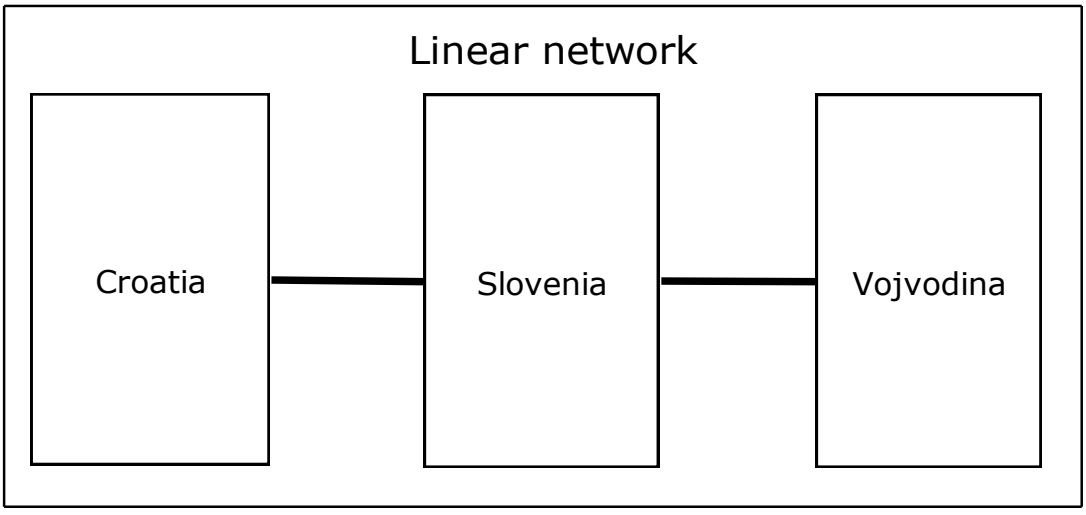

Proximity grouping
Croatia
part of the
Austro-Hungary empire
Slovenia
part of the
Austro-Hungary empire
Vojvodina
part of the
Austro-Hungary empire
Macedonia
once part of the
Ottoman empire, other
times part of Greece
Montenegro
independent kingdom
Serbia
independent kingdom

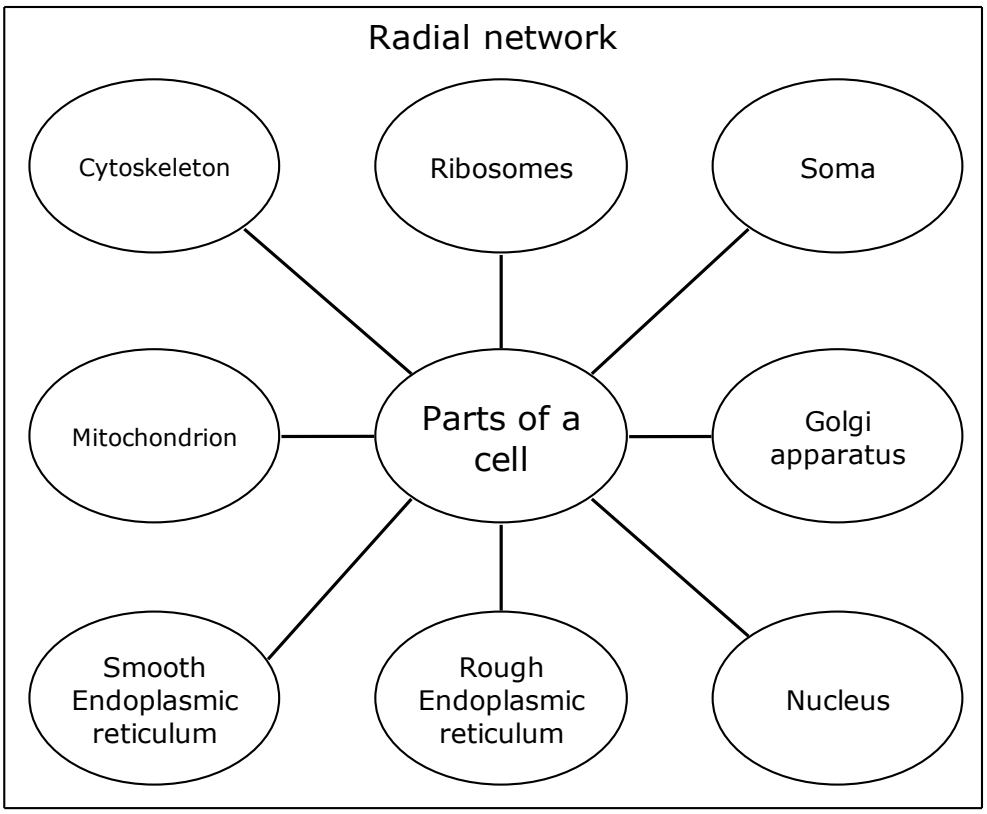

Boundary
Croatia
part of the
Austro-Hungary empire
Slovenia
part of the
Austro-Hungary empire
Vojvodina
part of the
Austro-Hungary empire
Macedonia
once part of the
Ottoman empire, other
times part of Greece
Montenegro
independent kingdom
Serbia
independent kingdom

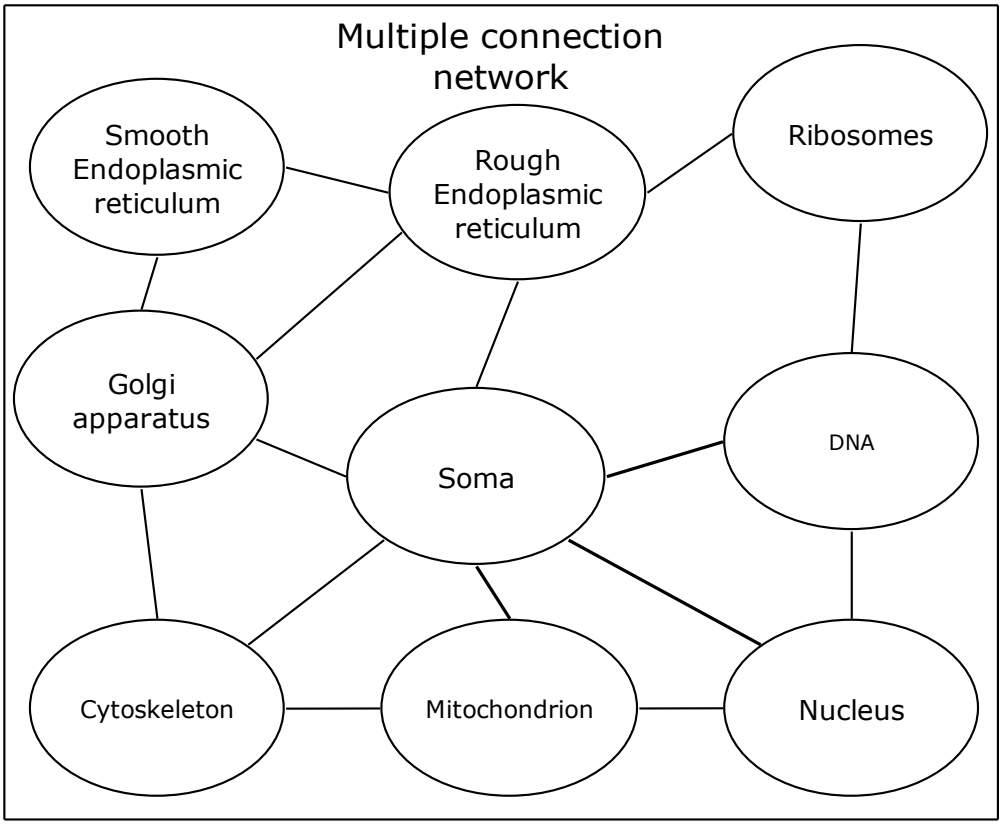

evaporation
sun's heat turns water to vapor
condensation
vapor rises and cools, condensing to clouds
Loop network
flow
gravity causes all water to flow down to the sea
precipitation
vapor cools further, and condenses to rain

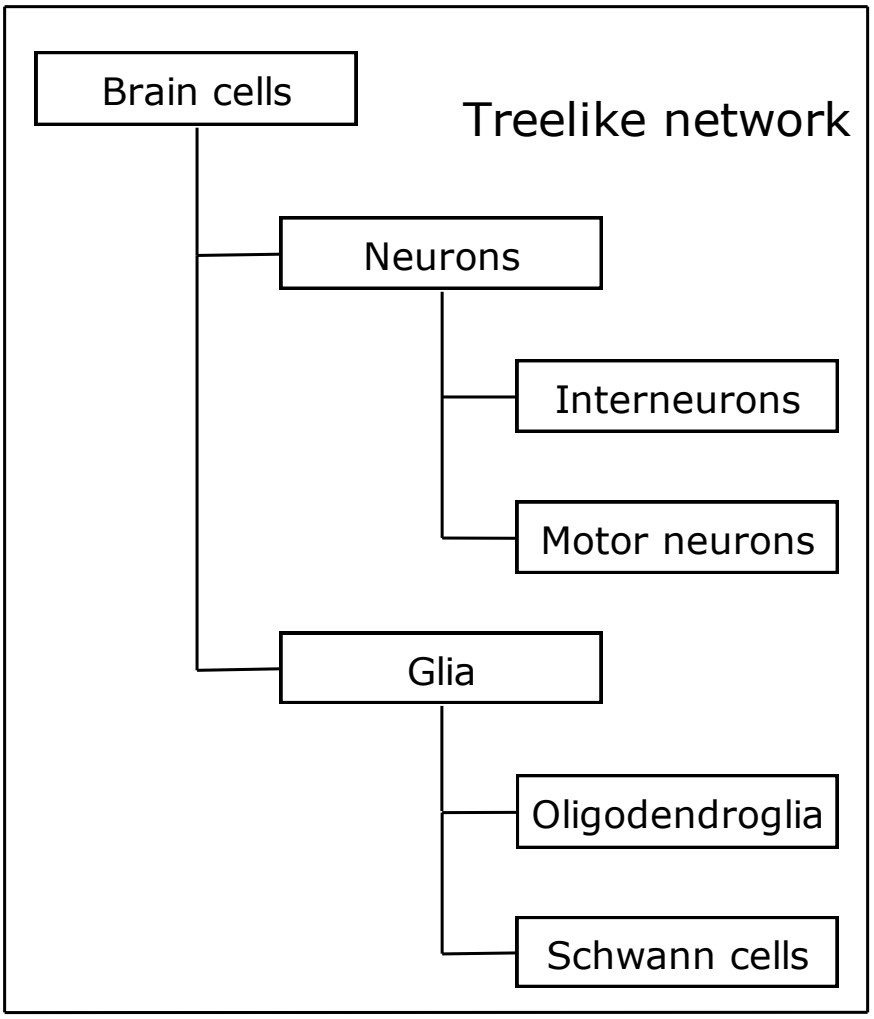

BDNF gene
Val variant
Met variant
Poor memory
Alzheimers?
Nonloop network

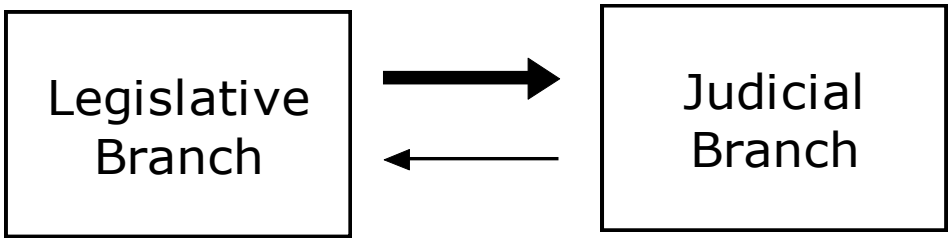

Directional linear network
Grass
Cow
Human

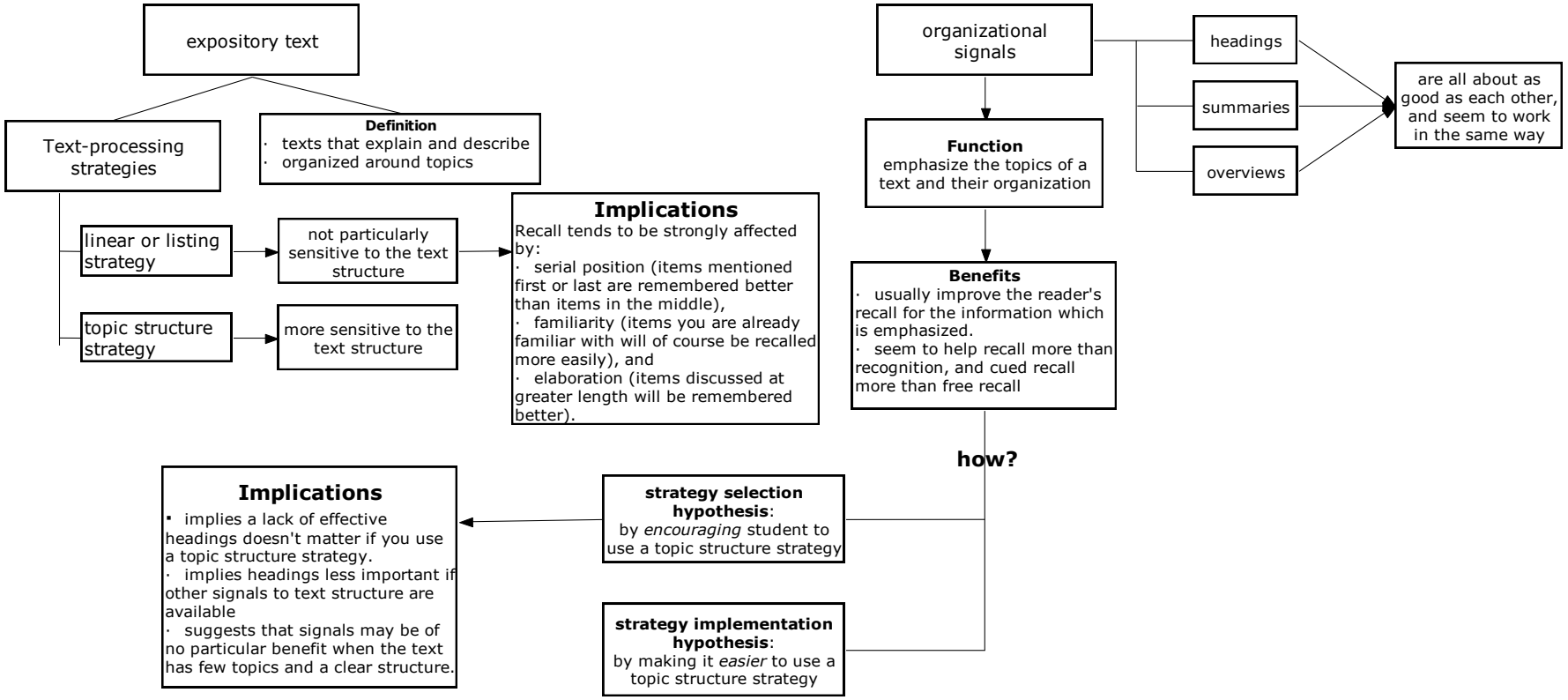

Linear network
Croatia
Slovenia
Vojvodina

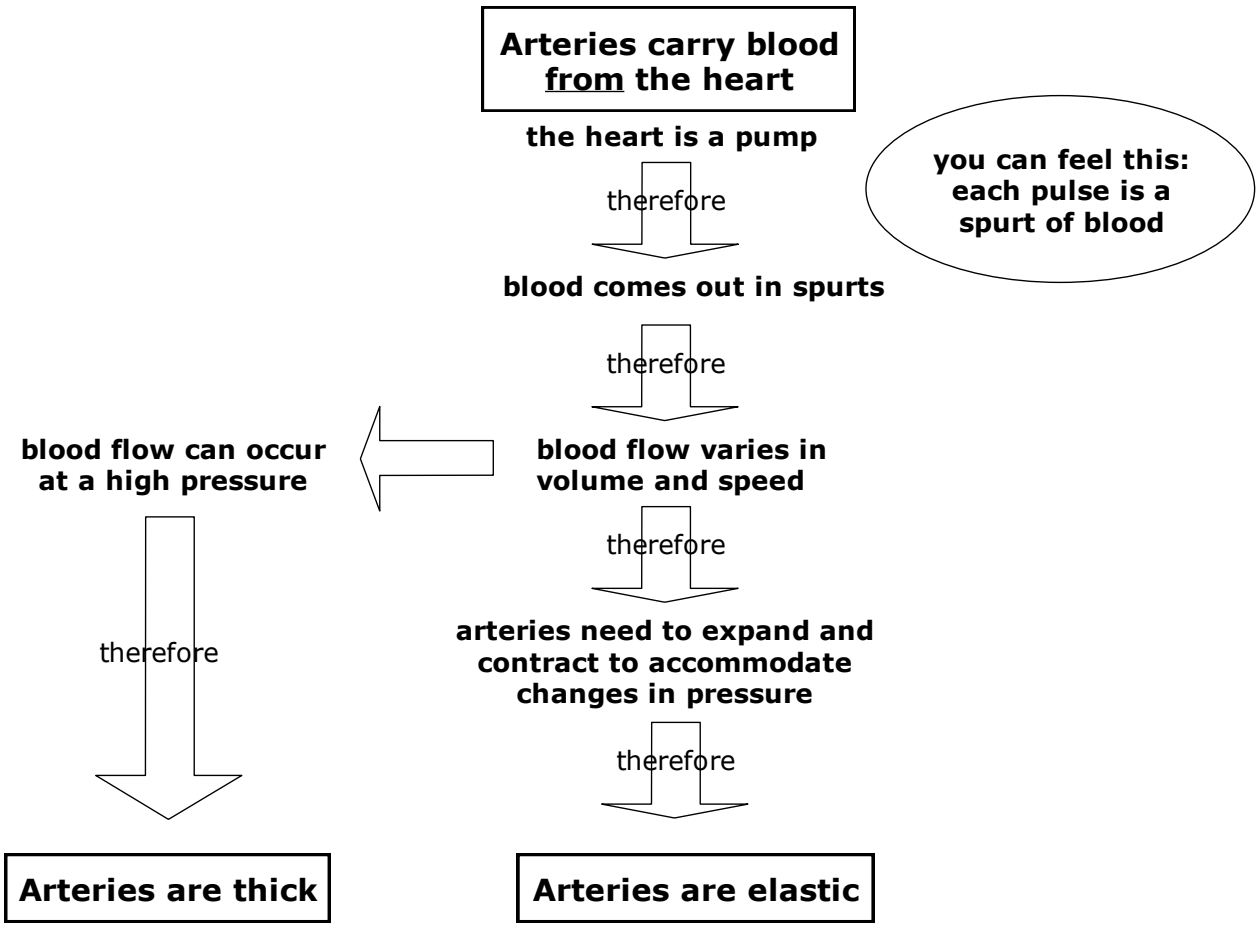

Radial network
Cytoskeleton
Ribosomes
Soma
Mitochondrion
Parts of a cell
Golgi apparatus
Smooth Endoplasmic reticulum
Rough Endoplasmic reticulum
Nucleus

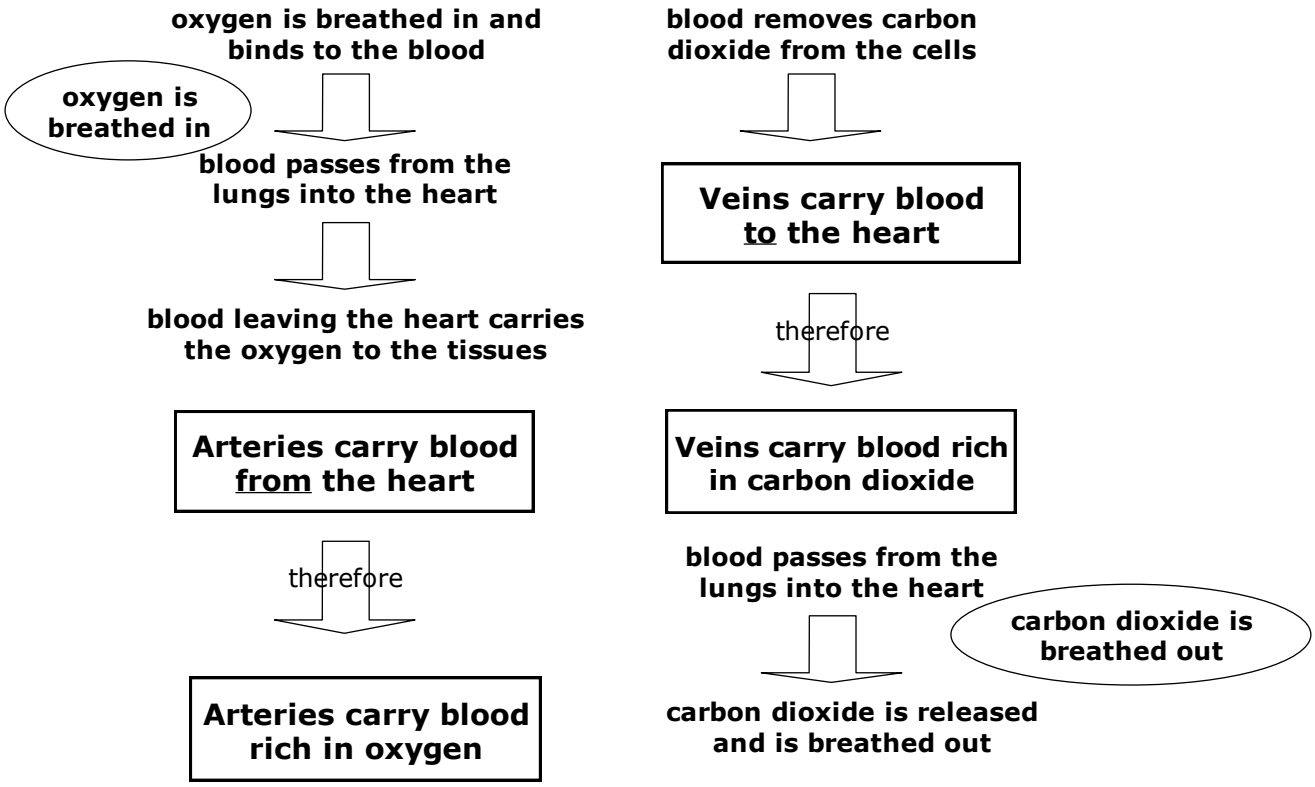

Multiple connection network
Smooth Endoplasmic reticulum
Rough Endoplasmic reticulum
Ribosomes
Golgi apparatus
Soma
DNA
Cytoskeleton
Mitochondrion
Nucleus


Brain cells
Treelike network
Neurons
Interneurons
Motor neurons
Glia
Oligodendroglia
Schwann cells

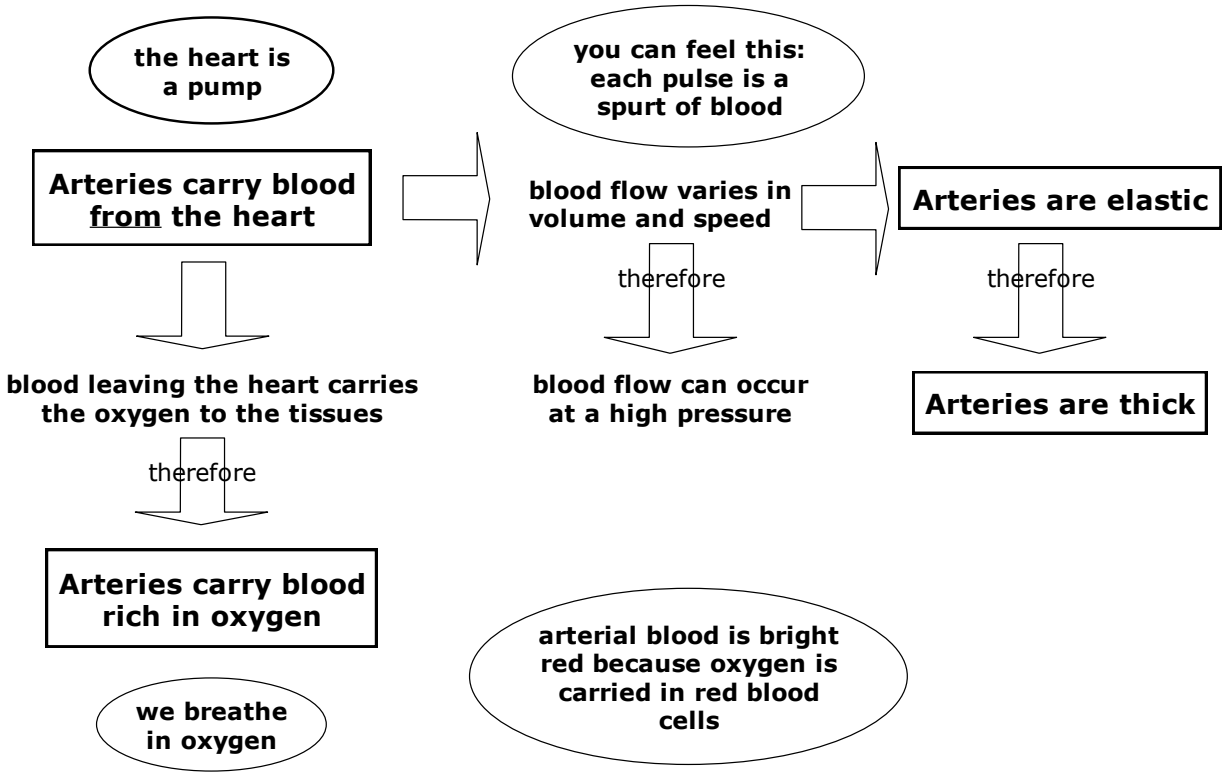

Legislative Branch
Judicial Branch

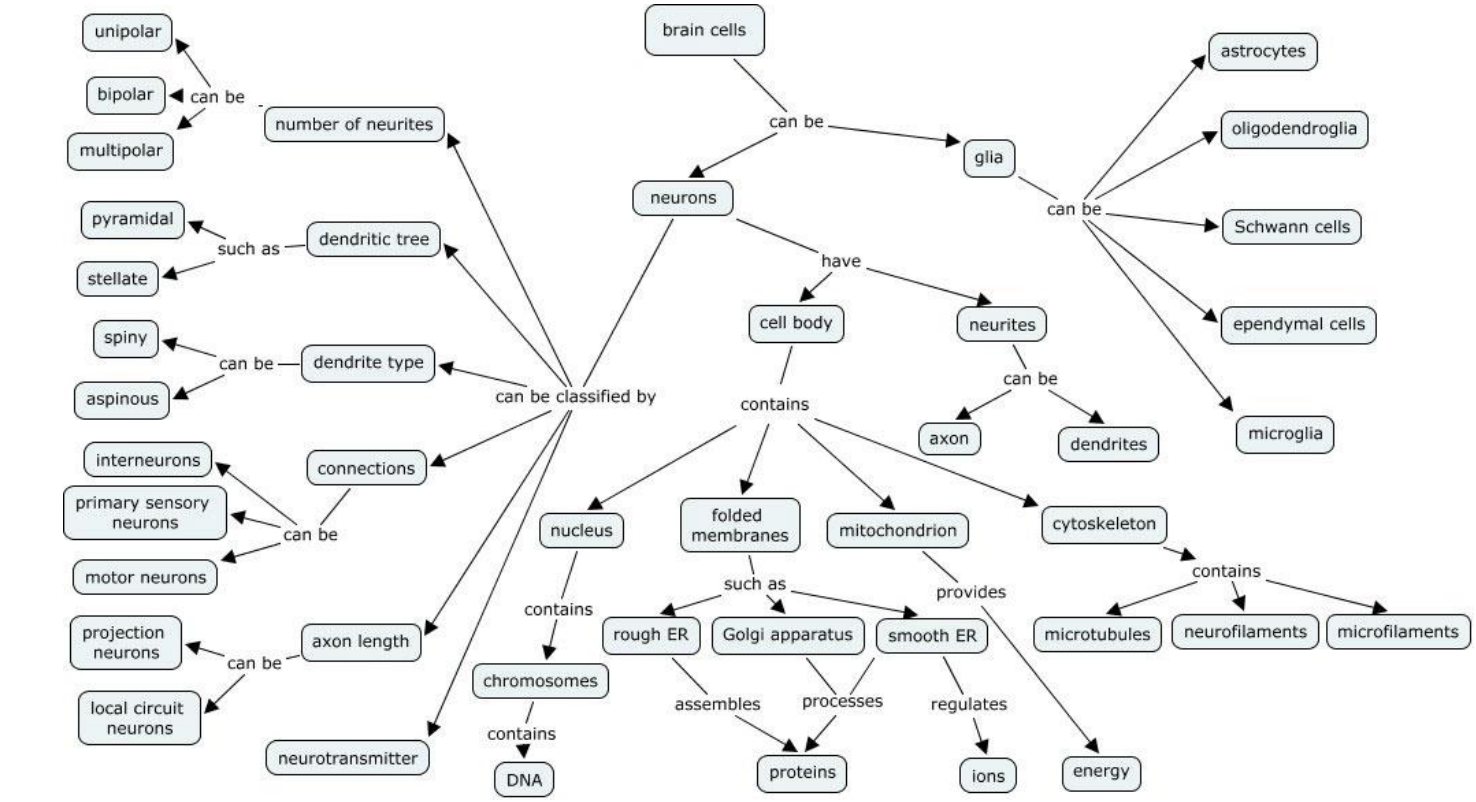

expository text
Text-processing strategies
Definition
· texts that explain and describe
· organized around topics
linear or listing strategy
not particularly sensitive to the text structure
topic structure strategy
more sensitive to the text structure
Implications
Recall tends to be strongly affected by:
· serial position (items mentioned first or last are remembered better than items in the middle),
· familiarity (items you are already familiar with will of course be recalled more easily), and
· elaboration (items discussed at greater length will be remembered better).
organizational signals
Function
emphasize the topics of a text and their organization
headings
summaries
overviews
are all about as good as each other, and seem to work in the same way
Benefits
· usually improve the reader's recall for the information which is emphasized.
· seem to help recall more than recognition, and cued recall more than free recall
how?
strategy selection hypothesis:
by encouraging student to use a topic structure strategy
strategy implementation hypothesis:
by making it easier to use a topic structure strategy
Implications
▪ implies a lack of effective headings doesn't matter if you use a topic structure strategy.
· implies headings less important if other signals to text structure are available
· suggests that signals may be of no particular benefit when the text has few topics and a clear structure.

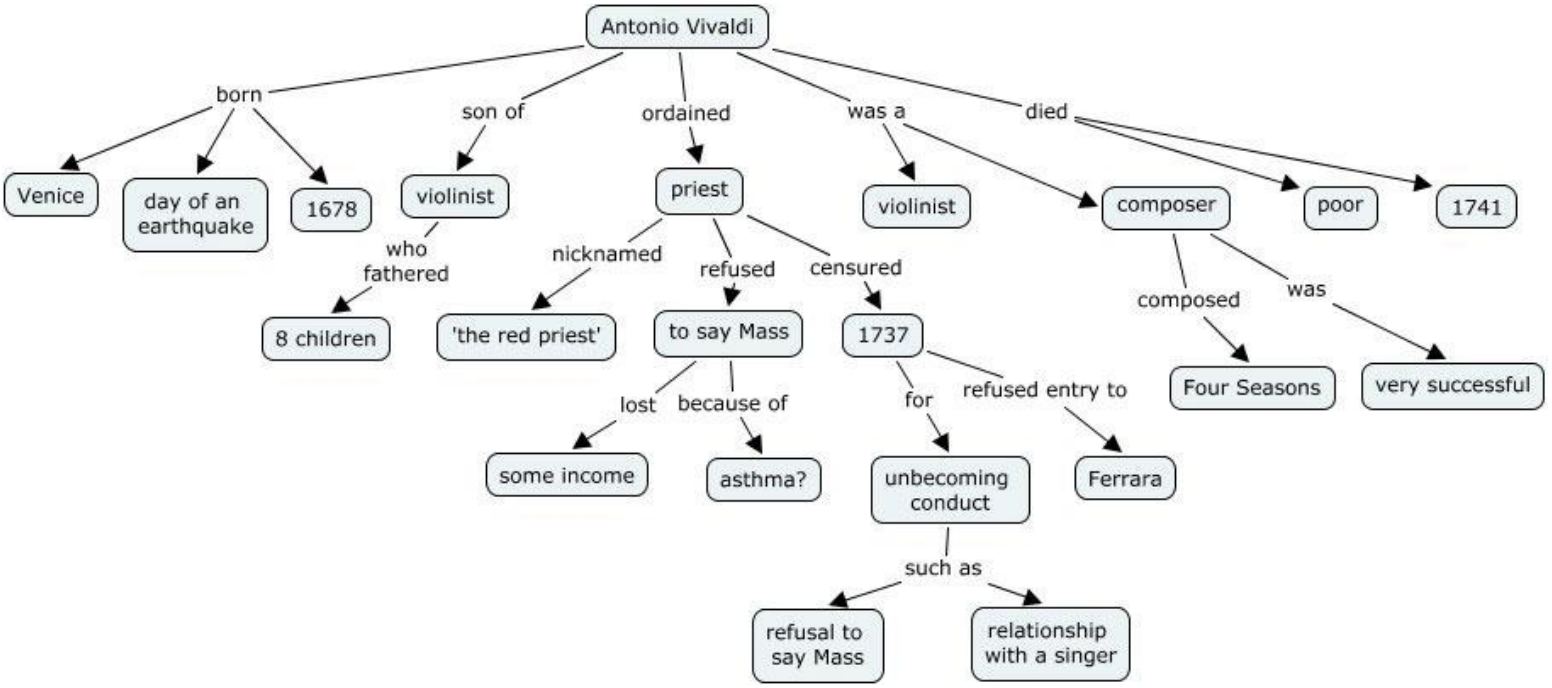

Arteries carry blood from the heart
the heart is a pump
therefore
blood comes out in spurts
you can feel this: each pulse is a spurt of blood
therefore
blood flow varies in volume and speed
blood flow can occur at a high pressure
therefore
therefore
arteries need to expand and contract to accommodate changes in pressure
therefore
Arteries are thick
Arteries are elastic

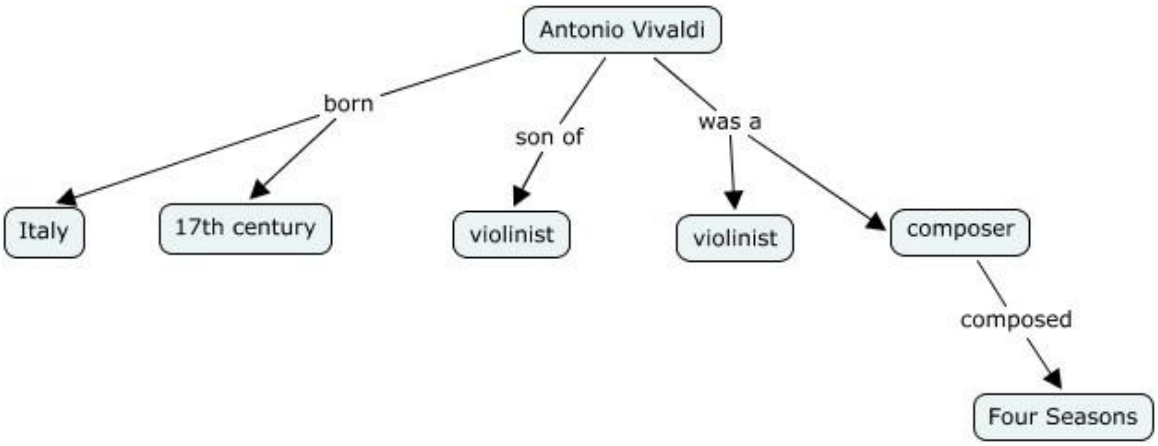


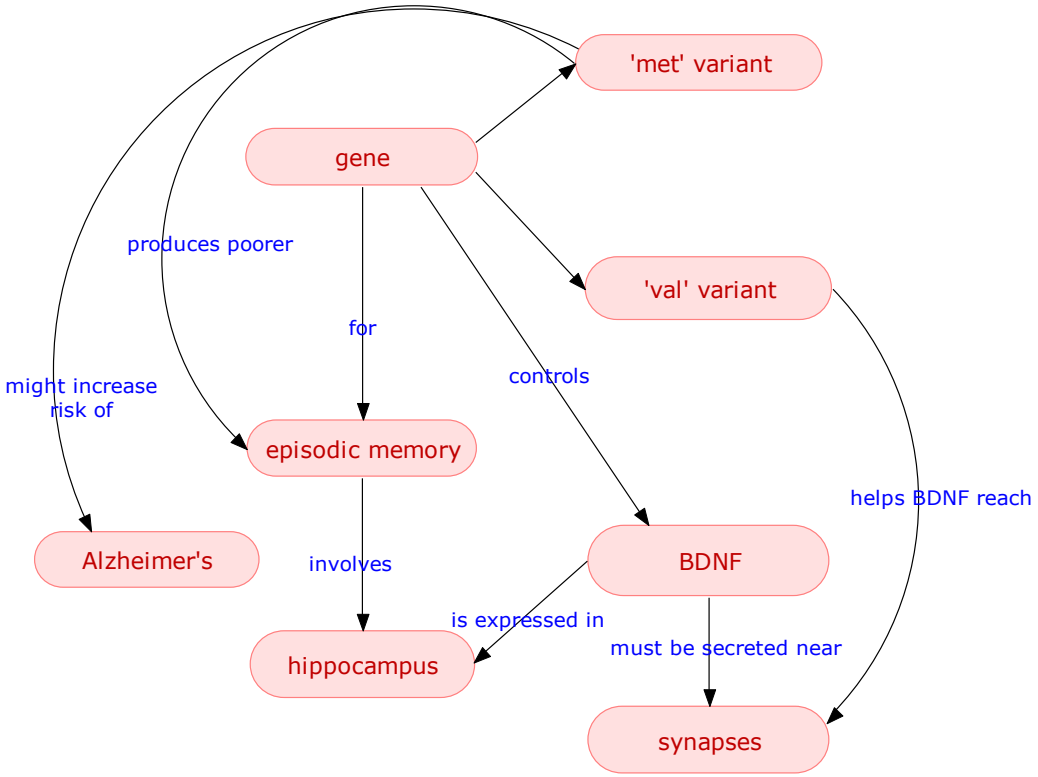
Arteries are elastic	because	they need to accommodate changes in pressure
Arteries are thick	because	they need to accommodate changes in pressure
Arteries carry blood from the heart	because	blood coming from the heart comes out at high pressure and in spurts of variable pressure
Arteries usually carry blood rich in oxygen	because	blood leaving the heart is rich in oxygen

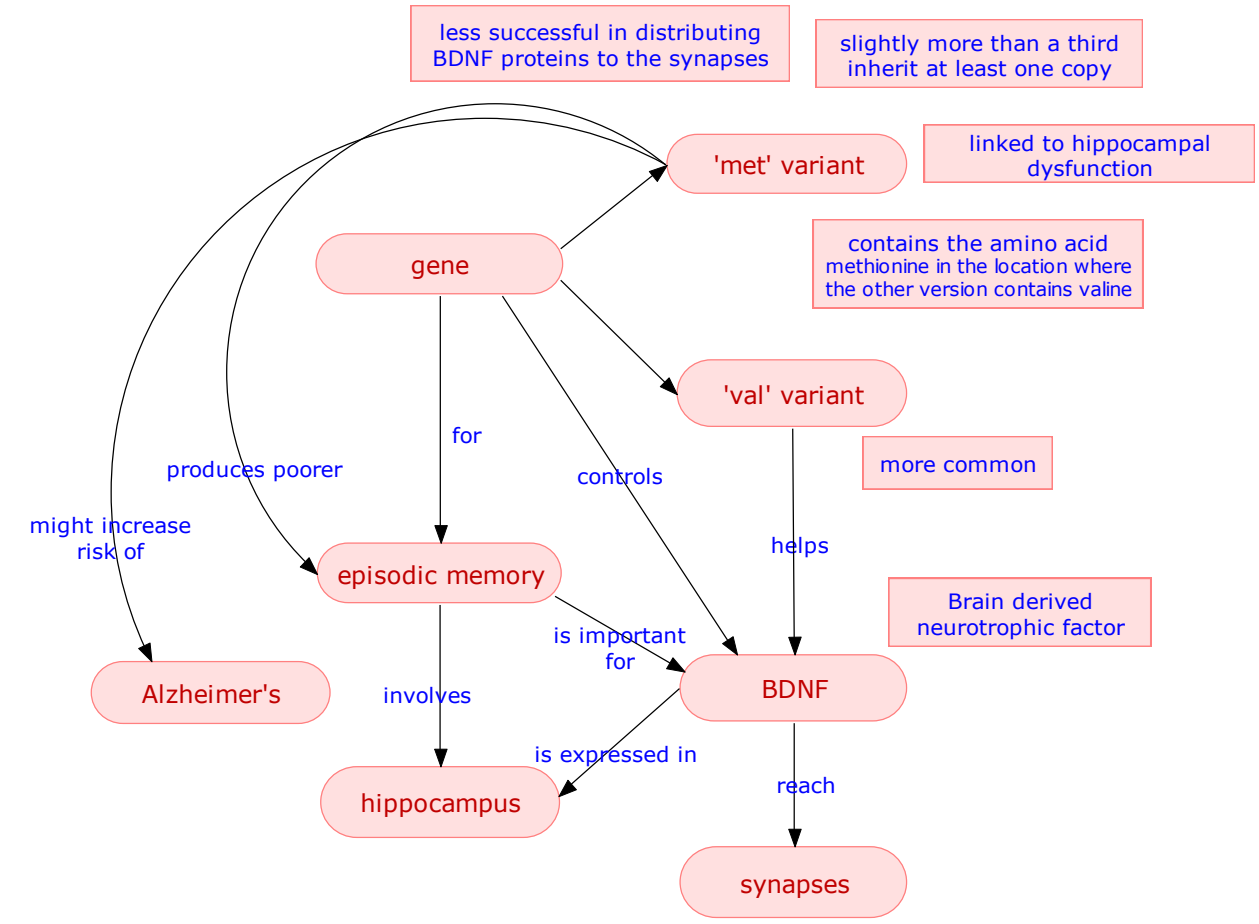

the heart is a pump
Arteries carry blood from the heart
blood leaving the heart carries the oxygen to the tissues
therefore
Arteries carry blood rich in oxygen
we breathe in oxygen
you can feel this: each pulse is a spurt of blood
blood flow varies in volume and speed
therefore
blood flow can occur at a high pressure
Arteries are elastic
therefore
Arteries are thick
arterial blood is bright red because oxygen is carried in red blood cells

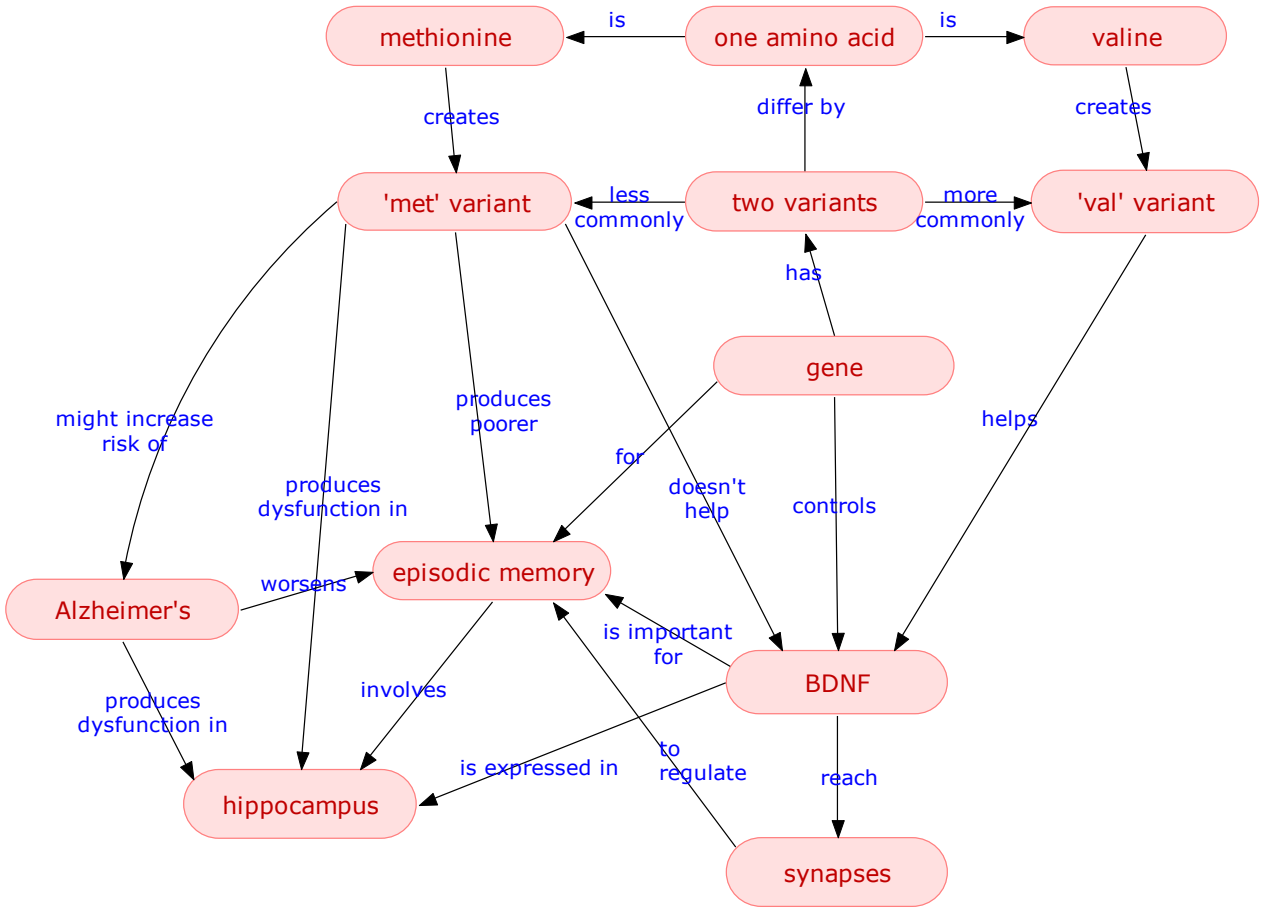

brain cells
can be
neurons
glia
can be
astrocytes
oligodendroglia
Schwann cells
ependymal cells
microglia
have
cell body
neurites
can be
axon
dendrites
contains
can be classified by
unipolar
bipolar
multipolar
can be
number of neurites
pyramidal
such as
dendritic tree
stellate
spiny
can be
dendrite type
aspinous
interneurons
primary sensory neurons
motor neurons
can be
connections
projection neurons
local circuit neurons
can be
axon length
neurotransmitter
nucleus
contains
chromosomes
contains
DNA
folded membranes
such as
rough ER
Golgi apparatus
smooth ER
assembles
processes
regulates
proteins
ions
mitochondrion
provides
energy
cytoskeleton
contains
microtubules
neurofilaments
microfilaments

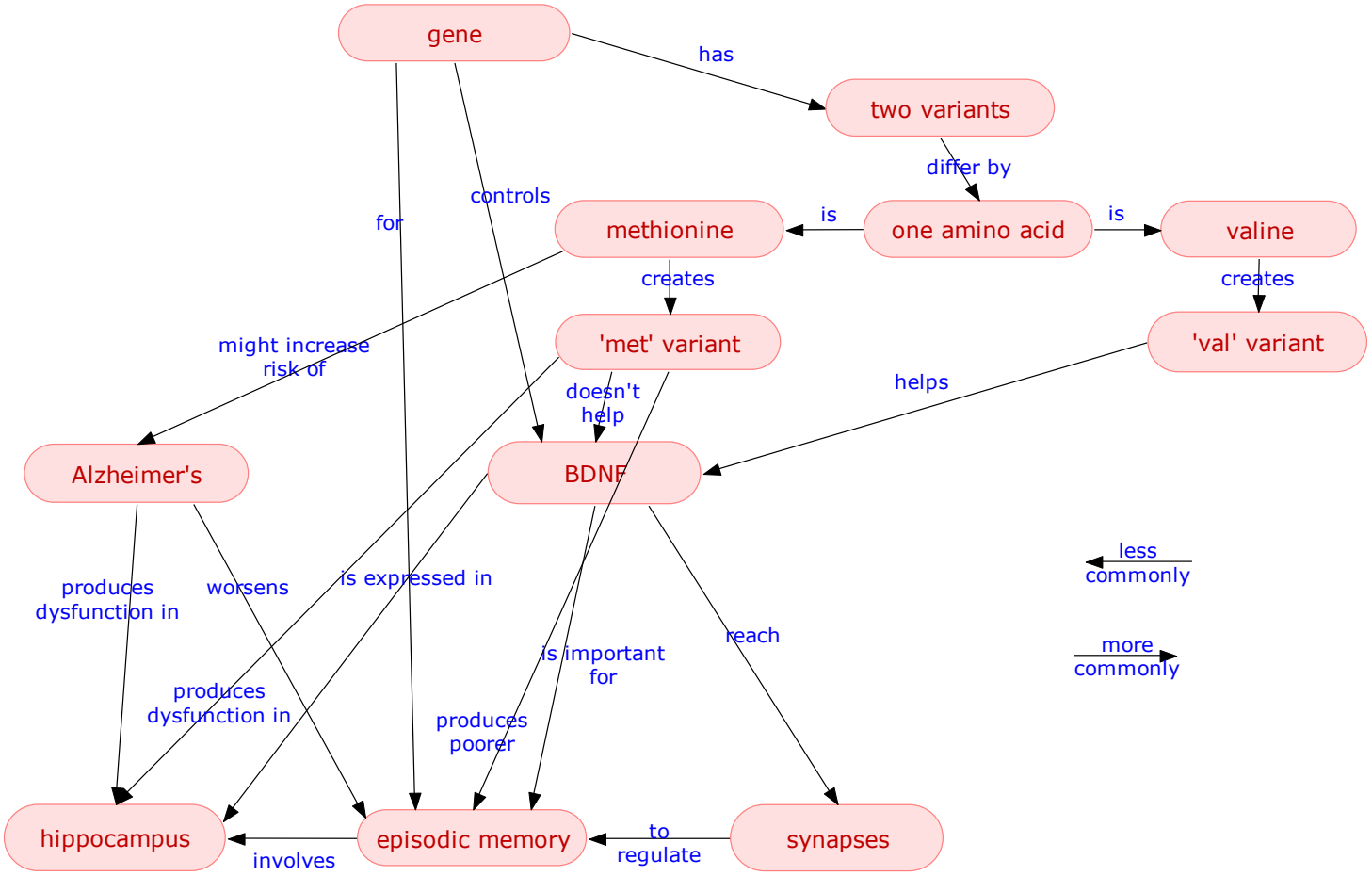

Antonio Vivaldi
born
Venice
day of an earthquake
1678
son of
violinist
who fathered
8 children
ordained
priest
nicknamed
'the red priest'
refused
to say Mass
lost
some income
because of
asthma?
censured
1737
for
unbecoming conduct
such as
refusal to say Mass
relationship with a singer
refused entry to
Ferrara
was a
violinist
composer
composed
Four Seasons
was
very successful
died
poor
1741

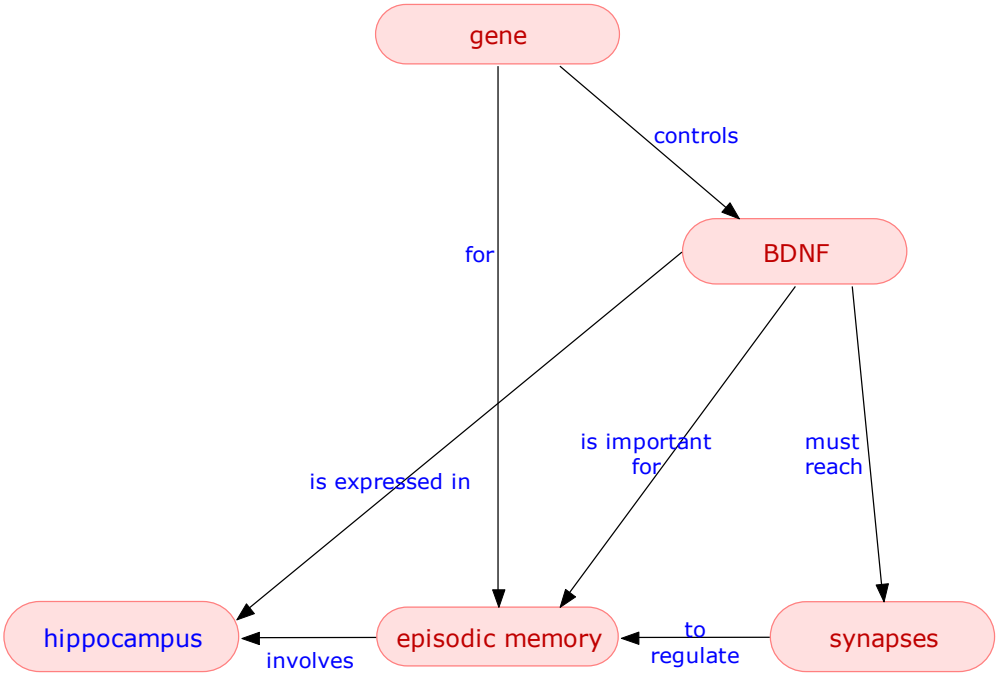

Antonio Vivaldi
born
son of
was a
Italy
17th century
violinist
violinist
composer
composed
Four Seasons

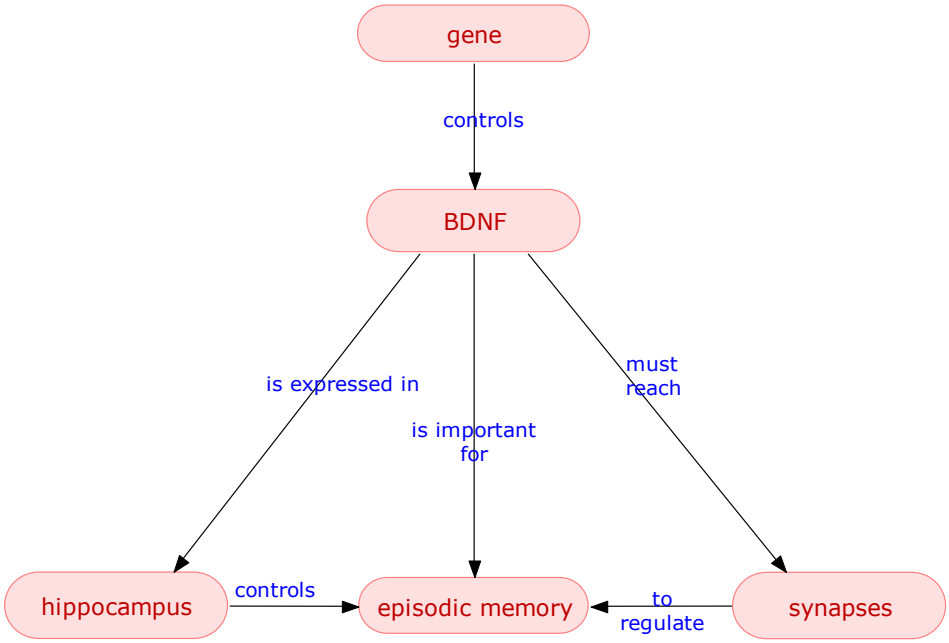

'met' variant
gene
produces poorer
'val' variant
for
might increase
risk of
controls
episodic memory
helps BDNF reach
Alzheimer's
involves
BDNF
is expressed in
must be secreted near
hippocampus
synapses

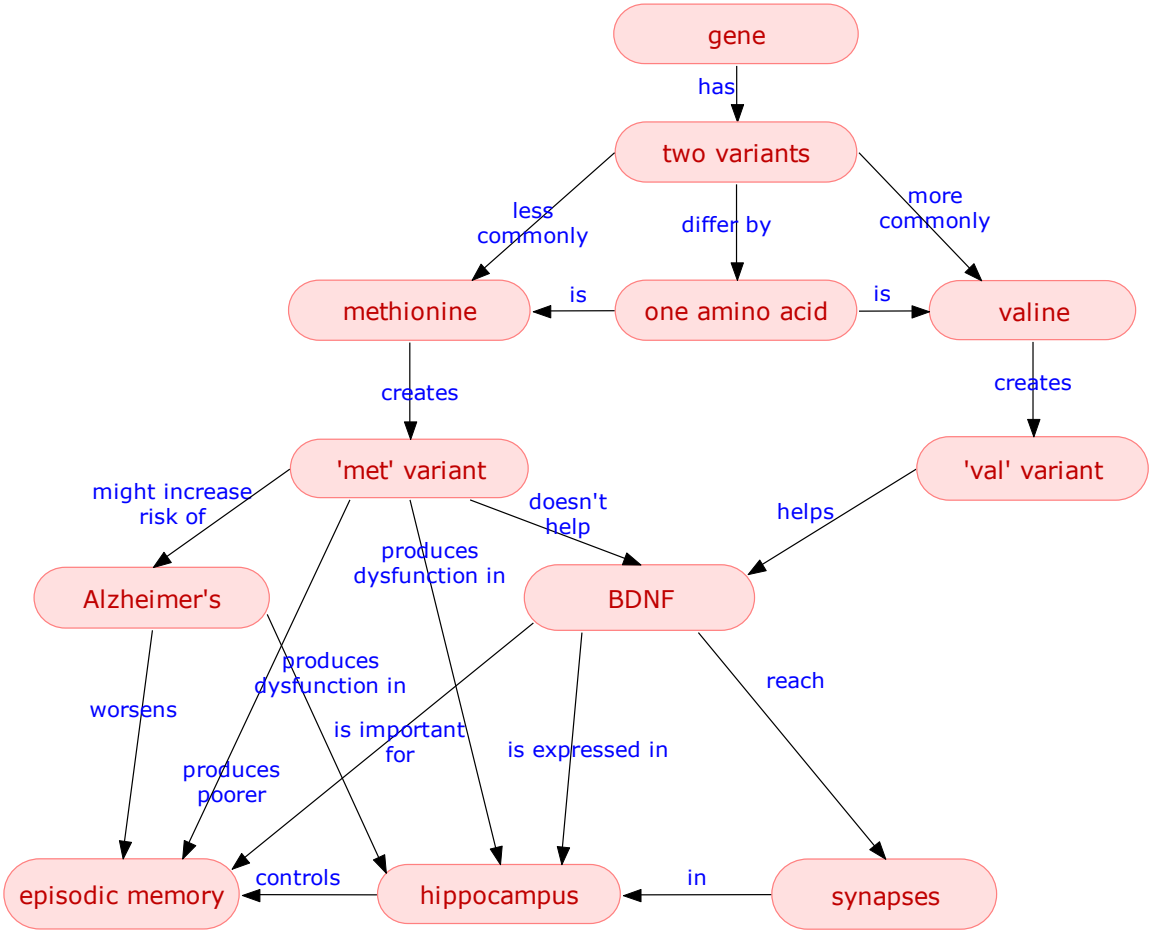

less successful in distributing BDNF proteins to the synapses
slightly more than a third inherit at least one copy
'met' variant
linked to hippocampal dysfunction
gene
contains the amino acid methionine in the location where the other version contains valine
'val' variant
for
produces poorer
controls
more common
might increase risk of
episodic memory
helps
Brain derived neurotrophic factor
is important for
Alzheimer's
involves
BDNF
is expressed in
reach
hippocampus
synapses

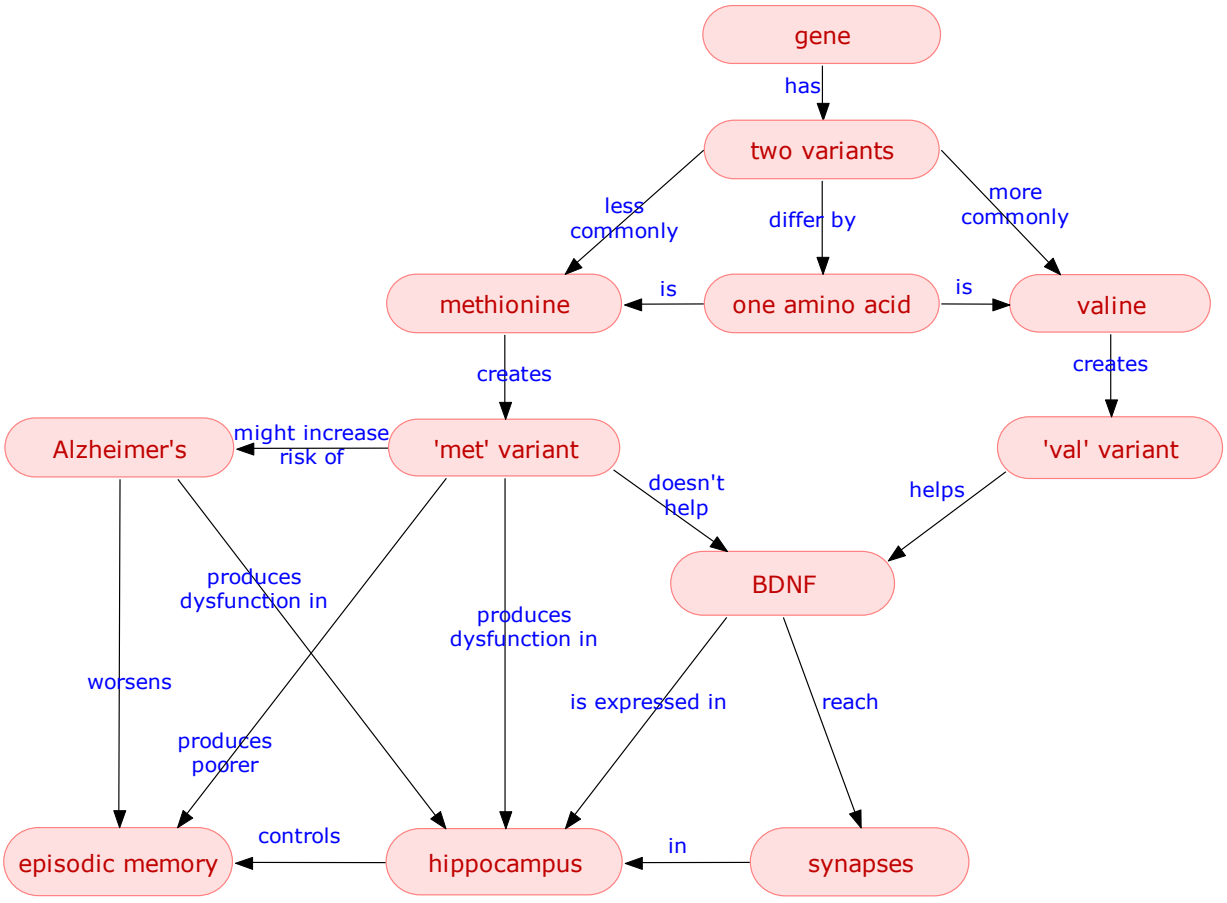

methionine
is
one amino acid
is
valine
creates
differ by
creates
'met' variant
less commonly
two variants
more commonly
'val' variant
has
gene
might increase risk of
produces poorer
for
doesn't help
controls
helps
produces dysfunction in
episodic memory
Alzheimer's
worsens
is important for
BDNF
produces dysfunction in
involves
to regulate
is expressed in
reach
hippocampus
synapses

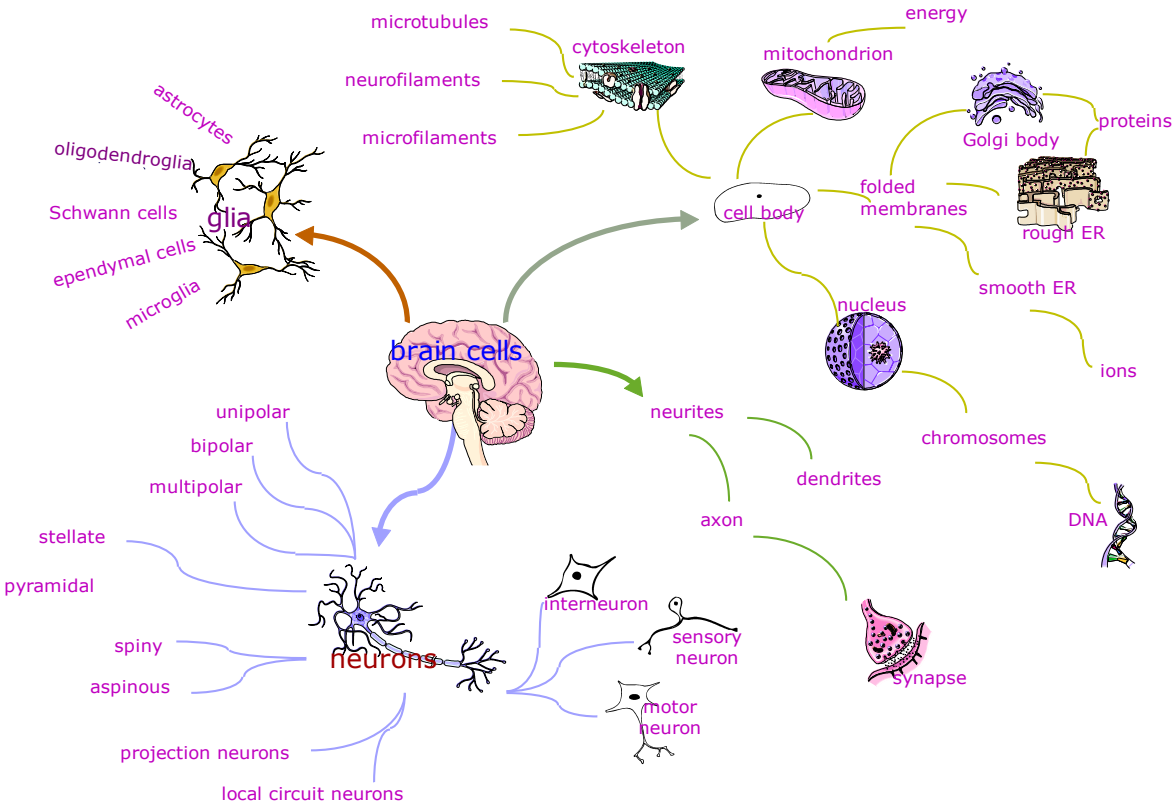

gene
has
two variants
differ by
controls
for
methionine
is
one amino acid
is
valine
creates
creates
'met' variant
'val' variant
might increase
risk of
doesn't
help
helps
Alzheimer's
BDNF
less
commonly
produces
dysfunction in
worsens
is expressed in
reach
is important
for
more
commonly
produces
dysfunction in
produces
poorer
hippocampus
involves
episodic memory
to
regulate
synapses

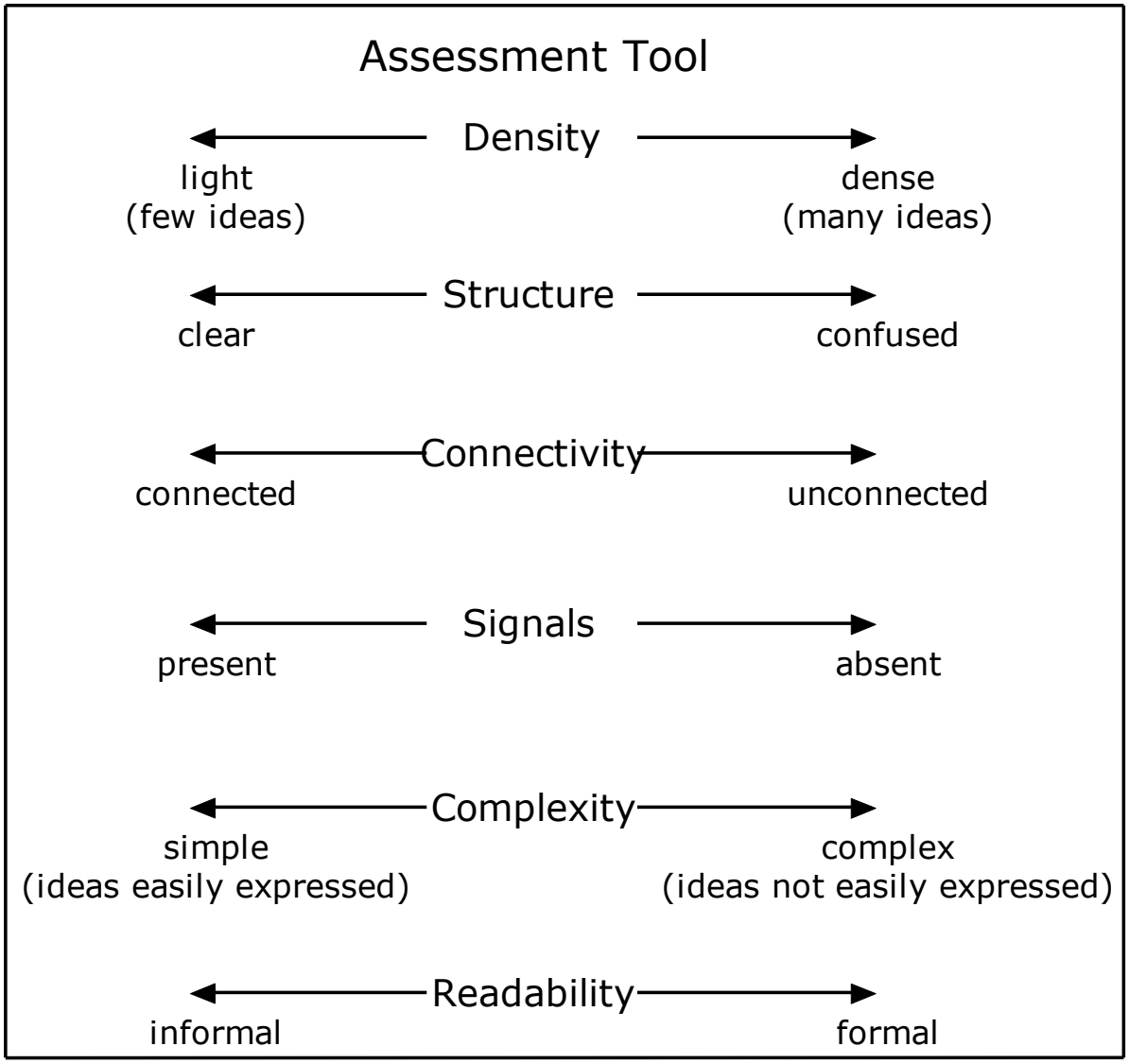

gene
controls
for
BDNF
is expressed in
is important
for
must
reach
hippocampus
involves
episodic memory
to
regulate
synapses


gene
controls
BDNF
is expressed in
is important for
must reach
hippocampus
controls
episodic memory
to regulate
synapses

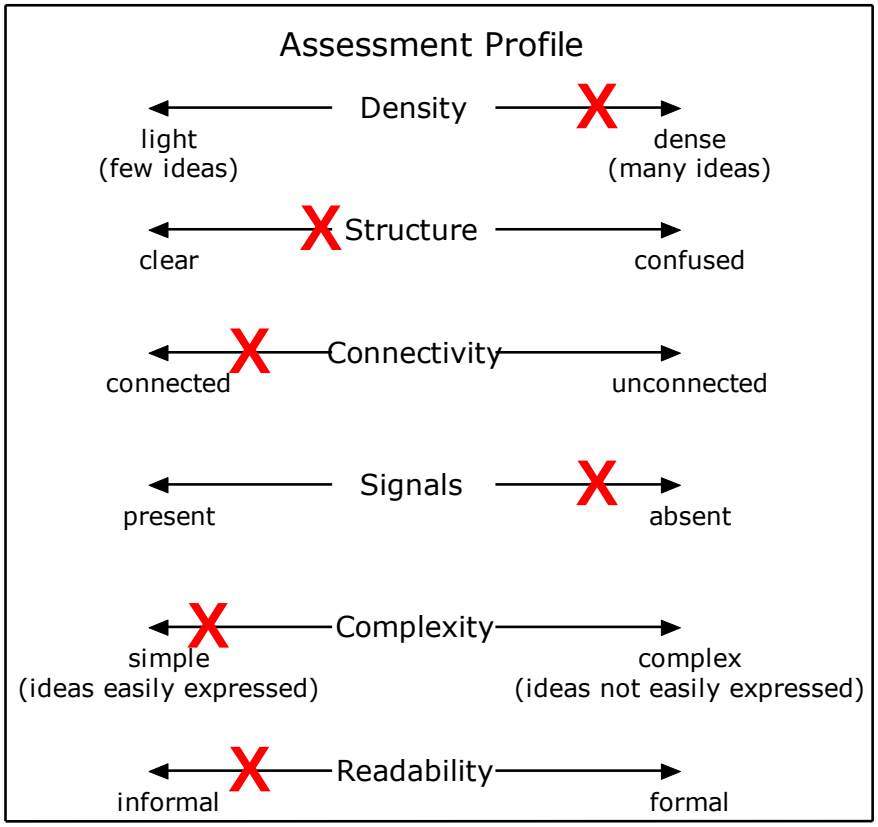

gene
has
two variants
less commonly
differ by
more commonly
methionine
is
one amino acid
is
valine
creates
creates
'met' variant
'val' variant
might increase risk of
doesn't help
helps
produces dysfunction in
Alzheimer's
BDNF
produces dysfunction in
worsens
reach
is important for
is expressed in
produces poorer
episodic memory
controls
hippocampus
in
synapses


gene
has
two variants
less commonly
differ by
more commonly
methionine
is
one amino acid
is
valine
creates
creates
Alzheimer's
might increase risk of
'met' variant
'val' variant
doesn't help
helps
BDNF
produces dysfunction in
produces dysfunction in
worsens
is expressed in
reach
produces poorer
episodic memory
controls
hippocampus
in
synapses

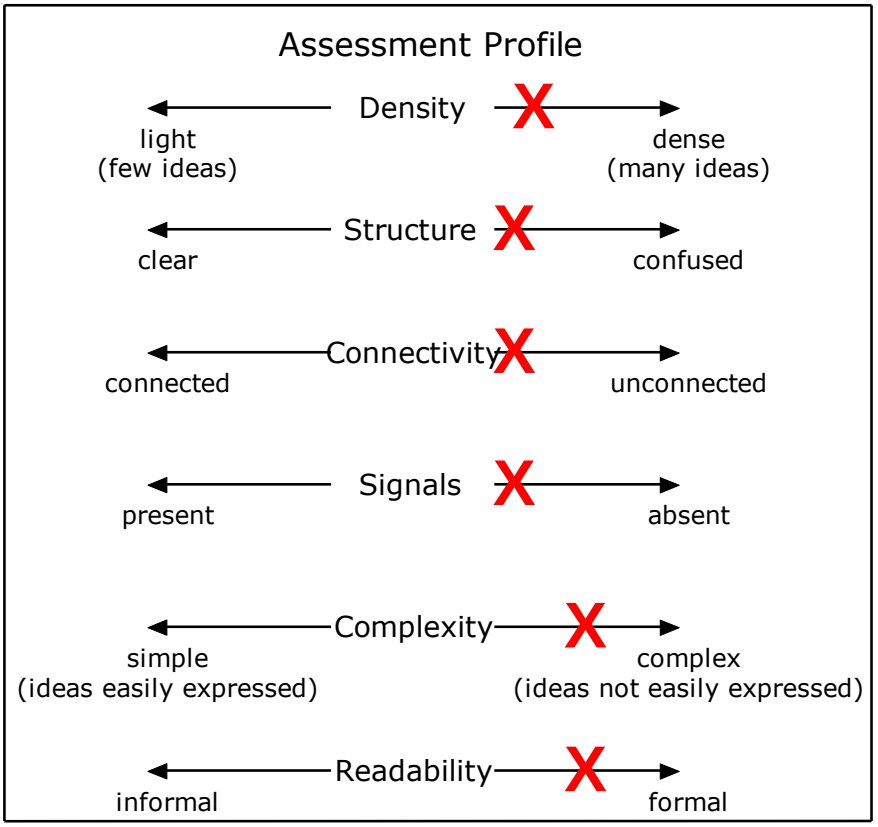

brain cells
glia
astrocytes
oligodendroglia
Schwann cells
ependymal cells
microglia
cell body
microtubules
neurofilaments
microfilaments
cytoskeleton
energy
mitochondrion
Golgi body
proteins
folded membranes
rough ER
smooth ER
nucleus
ions
chromosomes
DNA
neurites
dendrites
axon
synapse
neurons
unipolar
bipolar
multipolar
stellate
pyramidal
spiny
aspinous
projection neurons
local circuit neurons
interneuron
sensory neuron
motor neuron


Assessment Tool
Density
light
(few ideas)
dense
(many ideas)
Structure
clear
confused
Connectivity
connected
unconnected
Signals
present
absent
Complexity
simple
(ideas easily expressed)
complex
(ideas not easily expressed)
Readability
informal
formal

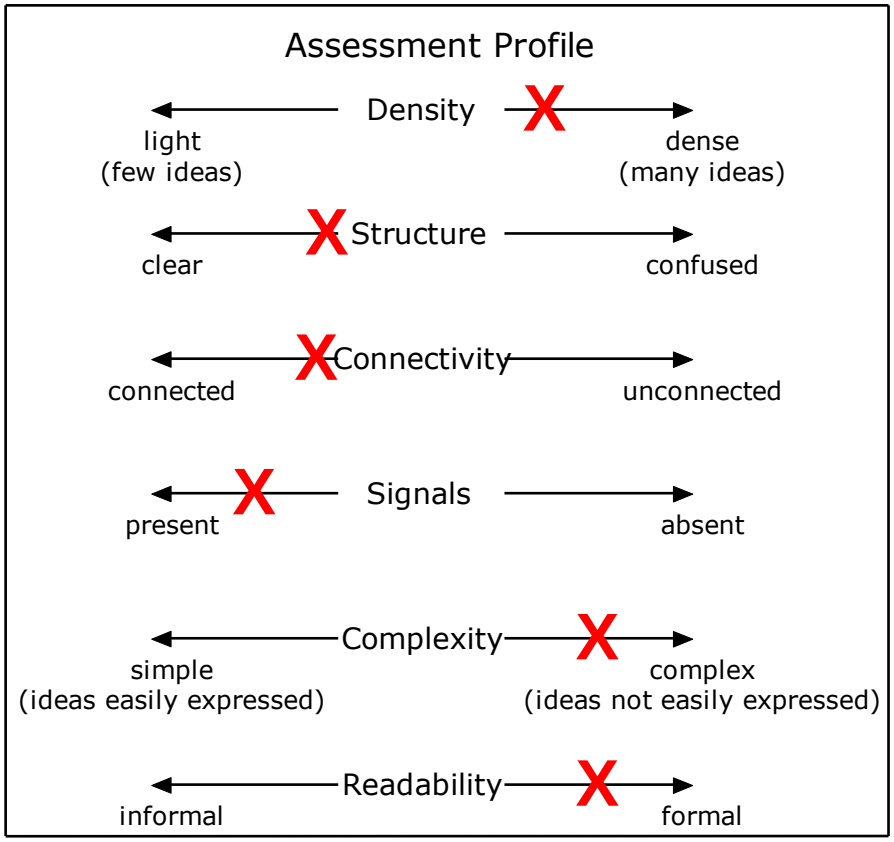
Profile for Benjamin Franklin text:



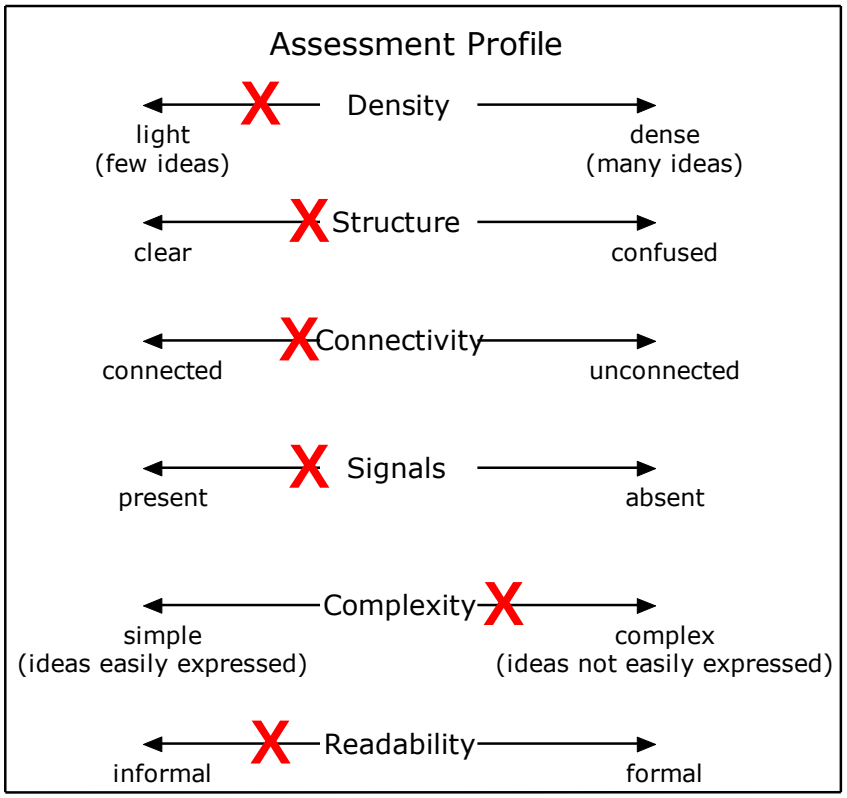
Profile of the original gene-for-memory text:



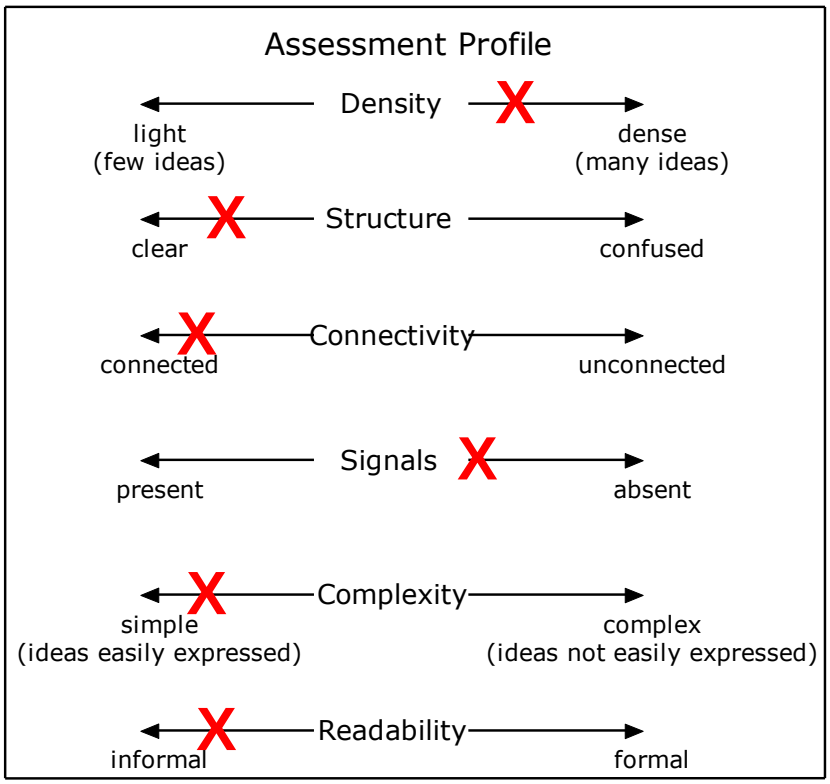
Profile for the final gene-for-memory text:



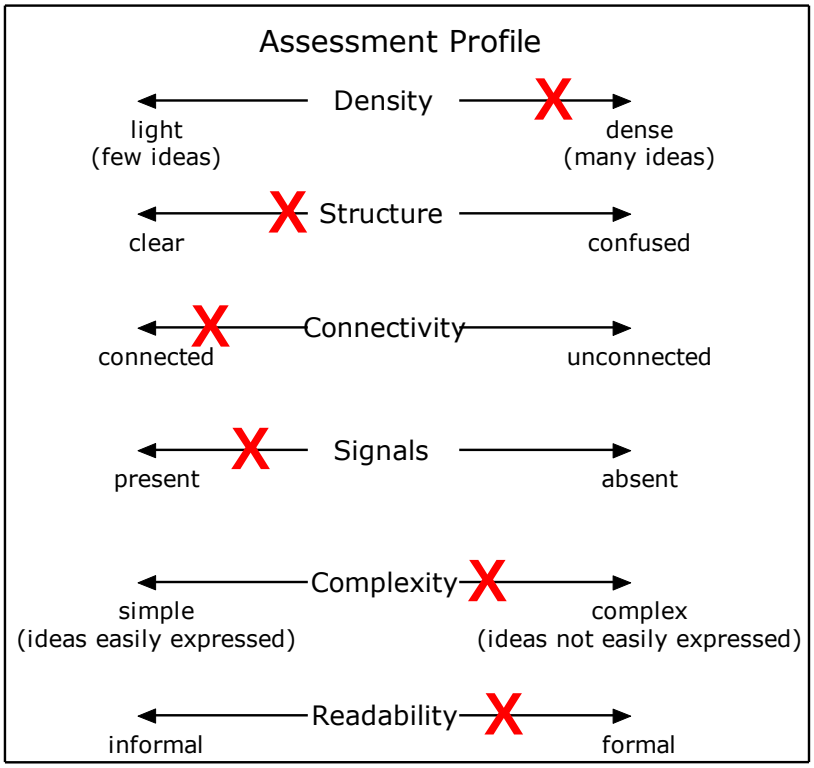
The role of consolidation in memory



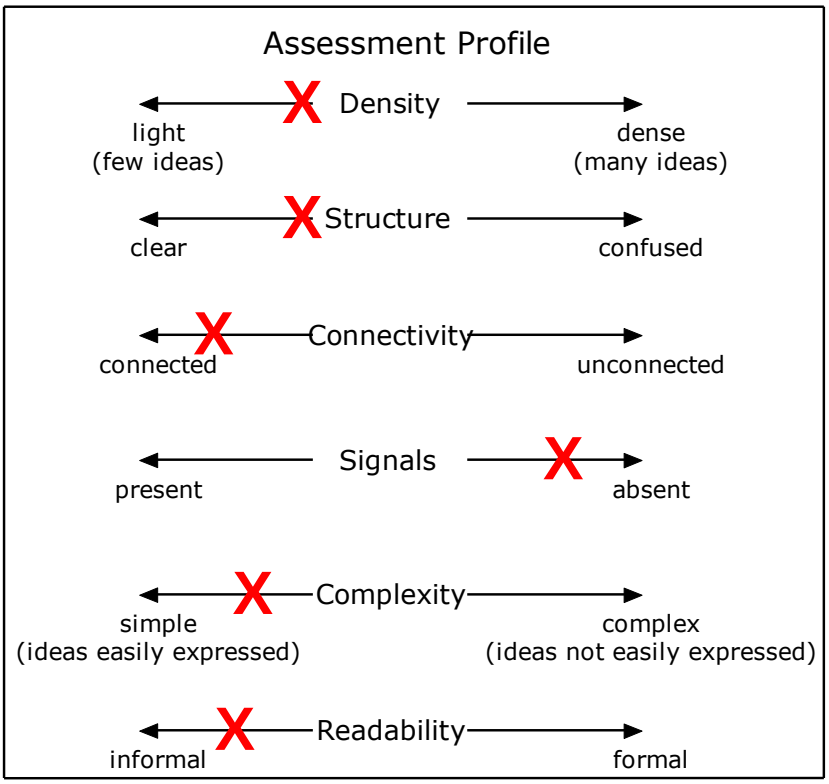
Early America



The relationship of ozone and ultraviolet radiation



How blood flows



Introducing brain cells