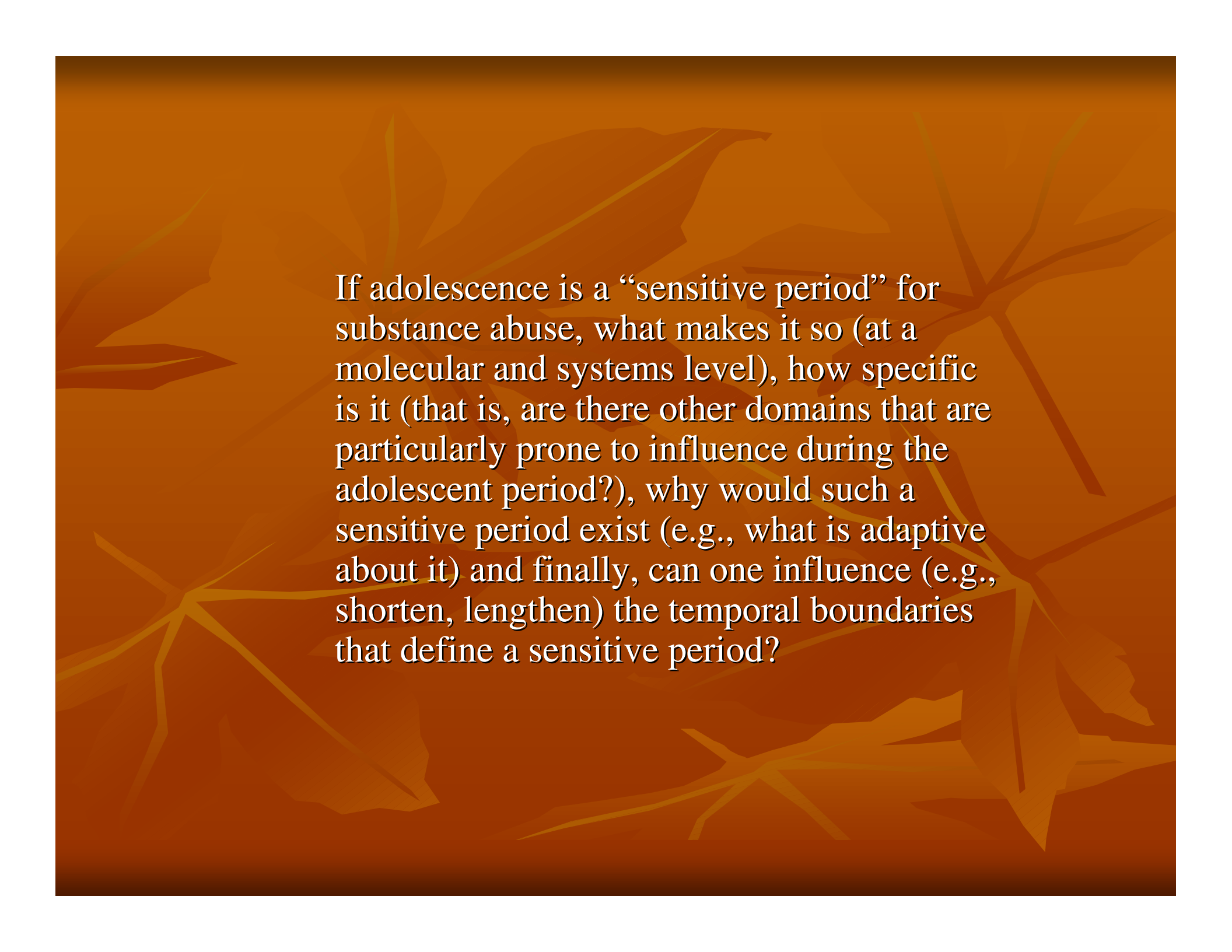


Some Ruminations and Observations

The background of the slide is a solid, warm brown color. Overlaid on this background is a repeating pattern of stylized, overlapping leaves. The leaves are rendered in various shades of brown, from light tan to dark chocolate, creating a textured, organic feel. The leaves are scattered across the page, with some appearing more prominent than others.



If adolescence is a “sensitive period” for substance abuse, what makes it so (at a molecular and systems level), how specific is it (that is, are there other domains that are particularly prone to influence during the adolescent period?), why would such a sensitive period exist (e.g., what is adaptive about it) and finally, can one influence (e.g., shorten, lengthen) the temporal boundaries that define a sensitive period?

n Are there earlier forces that shape the susceptibility of the adolescent period (e.g., early stress exposure, but if so, what accounts for individual differences in stress responsivity, and if the latter, is it stress responsivity that leads to vulnerability or stress exposure?)

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What contributes to the onset (e.g., puberty?) and offset (e.g., adulthood and if so, how is that defined?) of this sensitive period?

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If there is so much plasticity during the adolescent period to make it vulnerable to substance abuse, one would think that this same plasticity would make addiction or abuse highly reversible....is there any evidence of this? That is, is it easier to treat teens successfully than to treat adults?

n

How do we account for individual differences, including sex differences? For example, BJ said that development of limbic regions (e.g., acumbens) may be critically important in accounting for adolescent behavior....but what is driving the development of this circuit? In other words, what accounts for these individual differences? Genes? Experience? GxE?

n

Given constraints on what can be done in the human, and given some of the unique vulnerabilities of the human adolescent period (e.g., risk taking, reward seeking), what would be appropriate animal models that would inform the human case?

n Much of the work (at least in the human) looking at brain behavior relations is correlational – how can we advance the field beyond correlations to make our data more causal?

n

What does it mean to “masculinize” or “feminize” the brain, *behaviorally*? (not from a sexual reproductive perspective). From a neuroscience (at least neuroanatomy) perspective, work on sex differences has been very unsatisfying and unremarkable.

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We understand the role of sex hormones on sexual behavior but what is their role in cognitive or emotional behavior? E.G., we typically blame hormones for adolescent behavior but although this may be true for an obsession with sex, do such hormones actually impact non sexual behavior?