

# **Fear or Love**

## **A biological perspective**

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**Dedicated to a deeper understanding of the neurobiological basis of  
love, sexuality, and wellness**



**CONTEXT: Survival is the first law of nature.  
It is biologically important that we are not alone.**





**CONTEXT: Sociality and relationships have survival benefits. There is safety in numbers.**



**FEAR** and **LOVE** are most easily understood in the context of evolution.

Behaviors directly or indirectly support

**SURVIVAL**

social support & safety

**REPRODUCTION**

access to mates

care of offspring

genetic survival



**Our  
greatest  
fear  
is being  
truly  
“home  
alone”**







ACUTE FEAR and the hormones that support it are  
in context, ADAPTIVE permitting  
DEFENSE OF SELF AND OTHERS  
(vigilance, mobilization, escape)



The big challenge is **chronic** fear or stress.  
The absence of “trust.”







**There is no fear in love;  
but perfect love casteth out  
fear  
1 John 4:18**



**Our  
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alone”**



**Love may  
overcome  
fear,  
But HOW??**



# What is love?

**LOVE is usually  
defined by  
ATTACHMENTS AND  
SOCIAL BONDS.**

**Here I define it as  
a complex of  
neurobiological  
processes that  
facilitates health,  
wellness,  
reproductive  
fitness &  
biological  
optimality.**





# WHAT IS LOVE?



The emotions associated with love, social bonds and social support are not limited to humans and can be studied using the tools of neurobiology



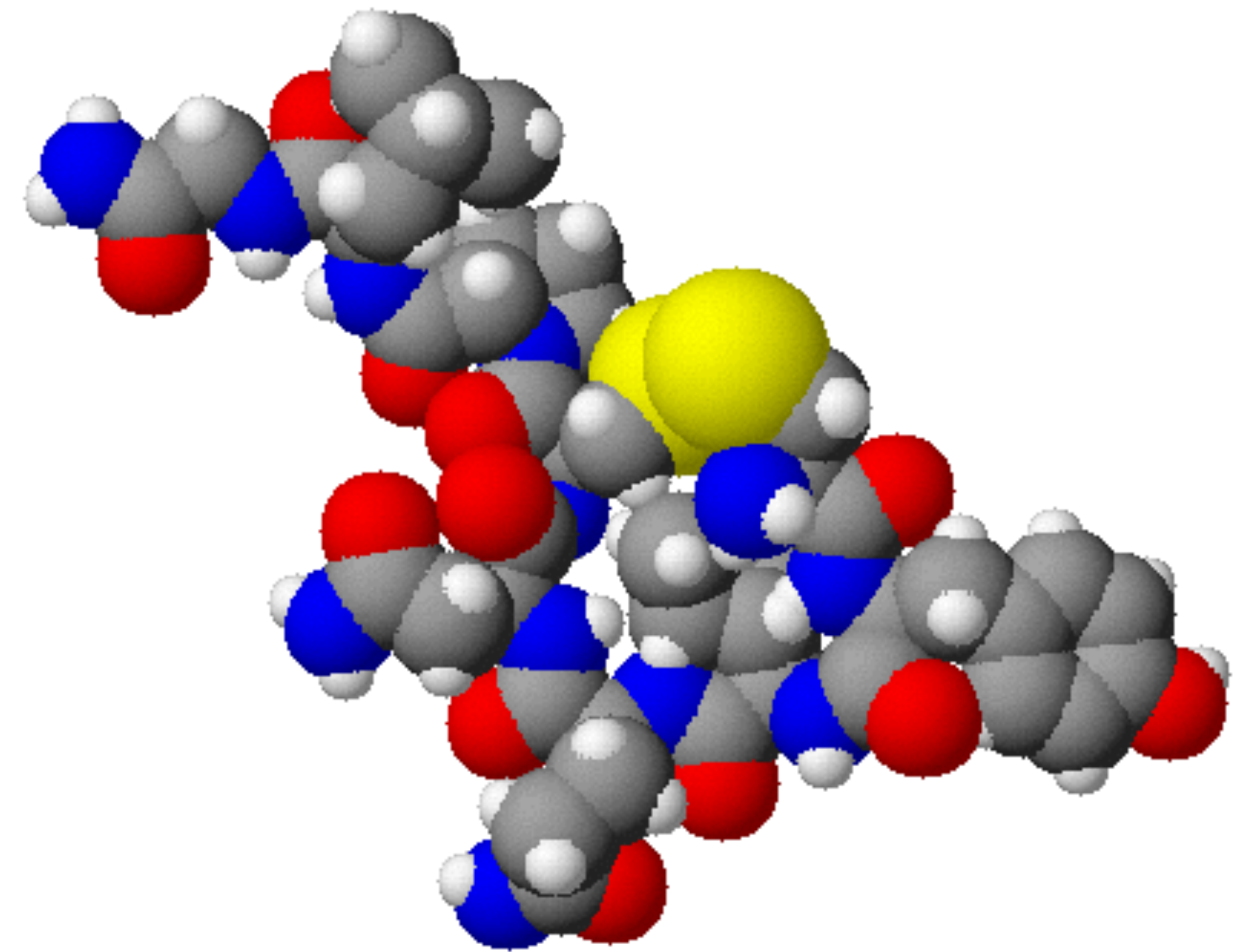
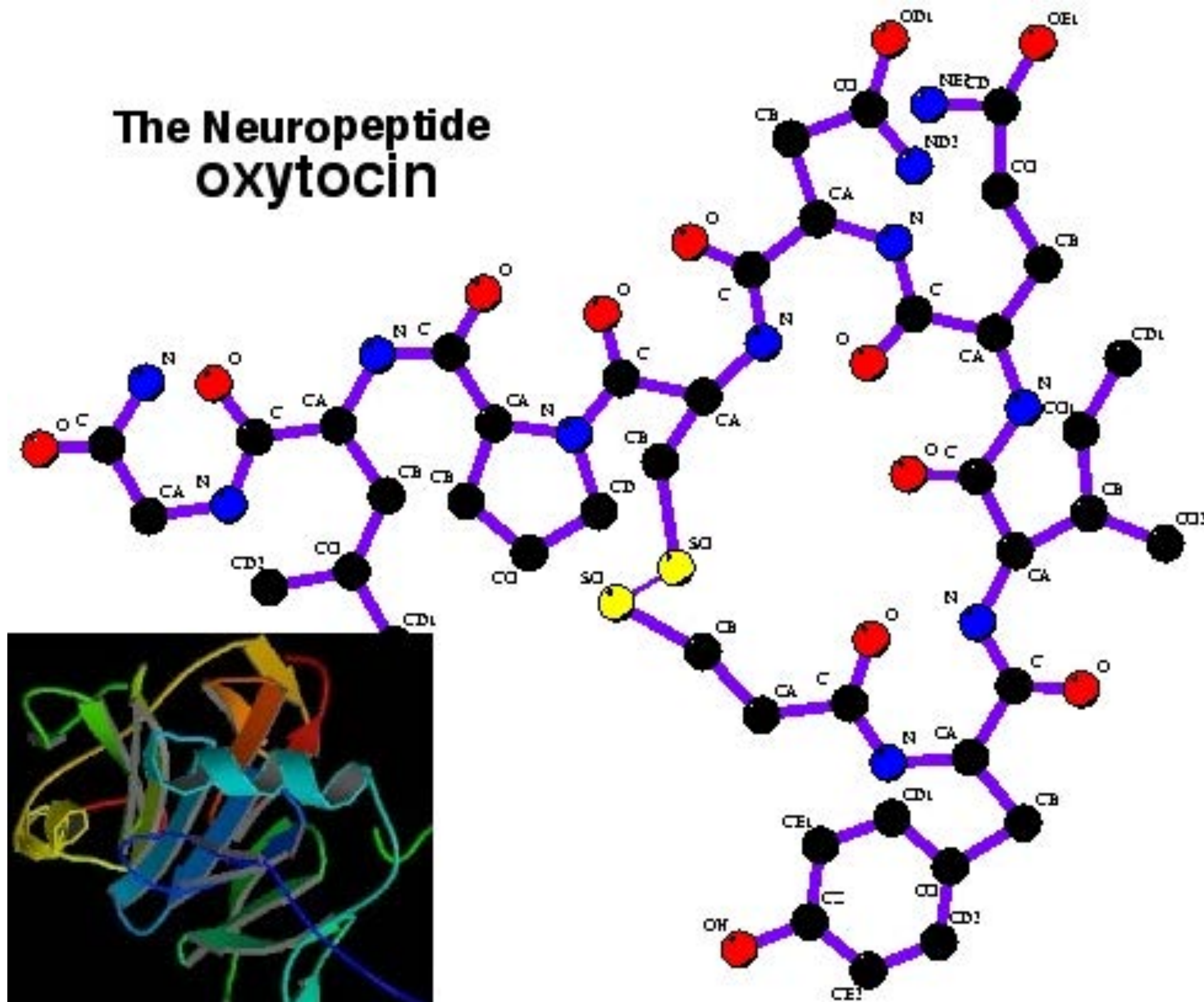


The EVOLUTIONARY and NEUROBIOLOGICAL prototype for LOVE and social bonds in mammals is the mother-child interaction. A condition that depends on OXYTOCIN.

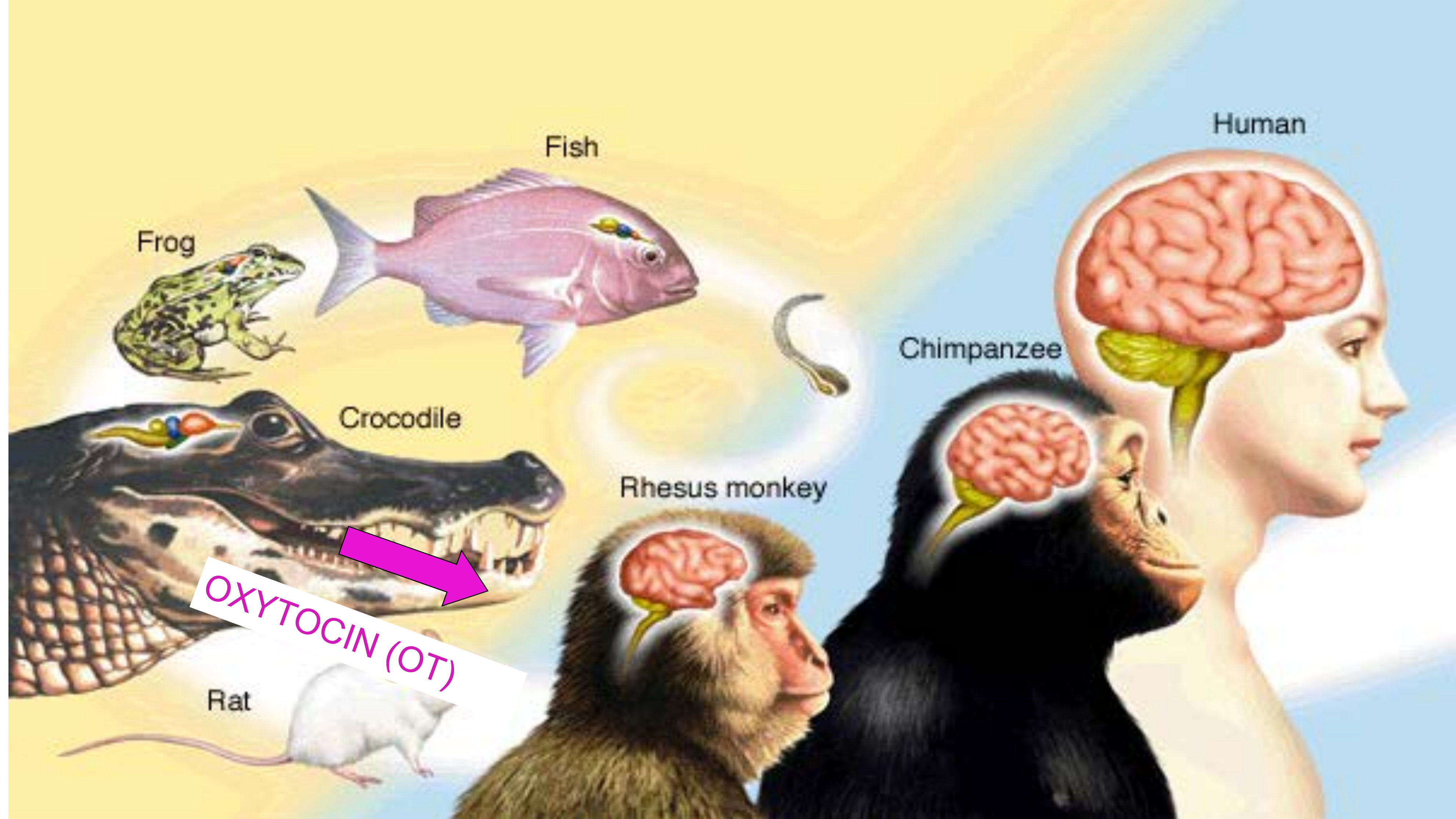


Oxytocin, an ancient hormone, is central to the biology of social behavior,  
social bonds, social support, sexual behavior,  
LOVE,  
And even the EVOLUTION OF THE  
HUMAN NERVOUS SYSTEM.

**The Neuropeptide  
oxytocin**







OXYTOCIN permitted the EVOLUTION of the MAMMALIAN NERVOUS SYSTEM and eventually the EVOLUTION of the HUMAN NERVOUS SYSTEM and the COGNITIVE EXPERIENCES WE CALL “LOVE”



**Regulators of emotions and attitudes,  
Including FEAR and LOVE  
are “embedded” in dynamic relationships  
and mediated by ancient hormones**





# The EVOLUTION OF HUMAN SOCIALITY involves:

A dynamic dance between LOVE AND FEAR  
Oxytocin and the related hormone Vasopressin  
facilitate SOCIAL ENGAGEMENT,  
a Sense of Safety, Trust and Synchrony





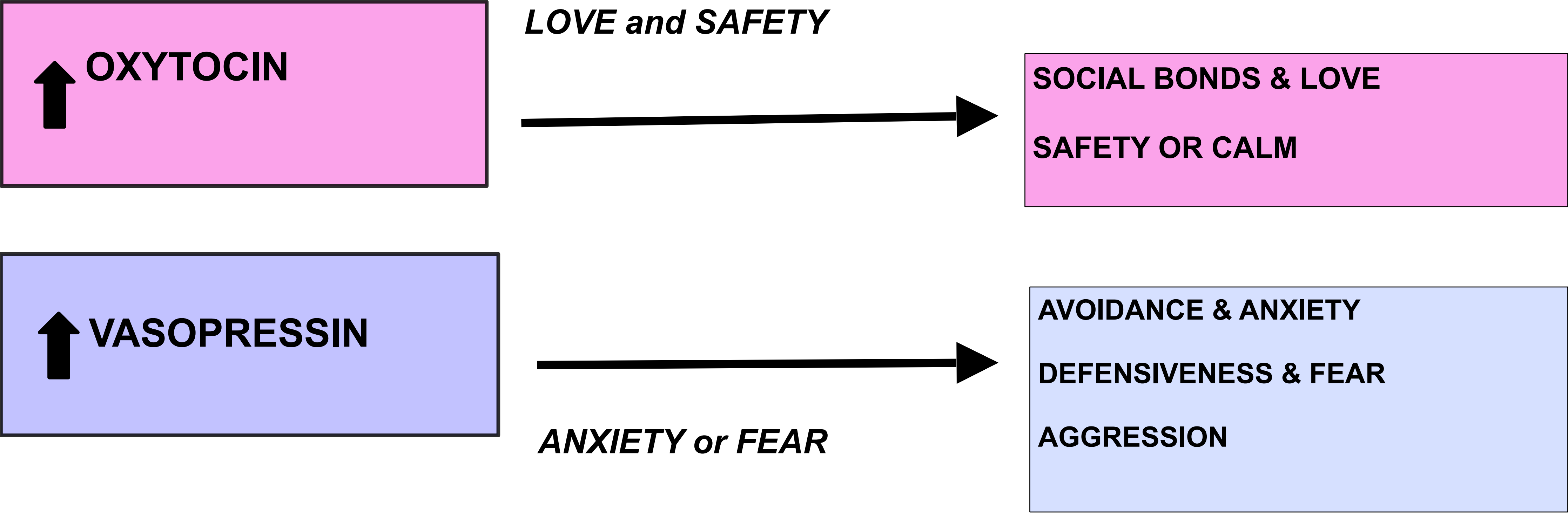
A black and white photograph of a couple dancing, with their silhouettes visible against a light background. The woman is in the foreground, leaning back, and the man is behind her, supporting her. The image is used as a background for the text.

**Oxytocin** does not act alone, It  
has a sibling hormone known as  
**vasopressin.**

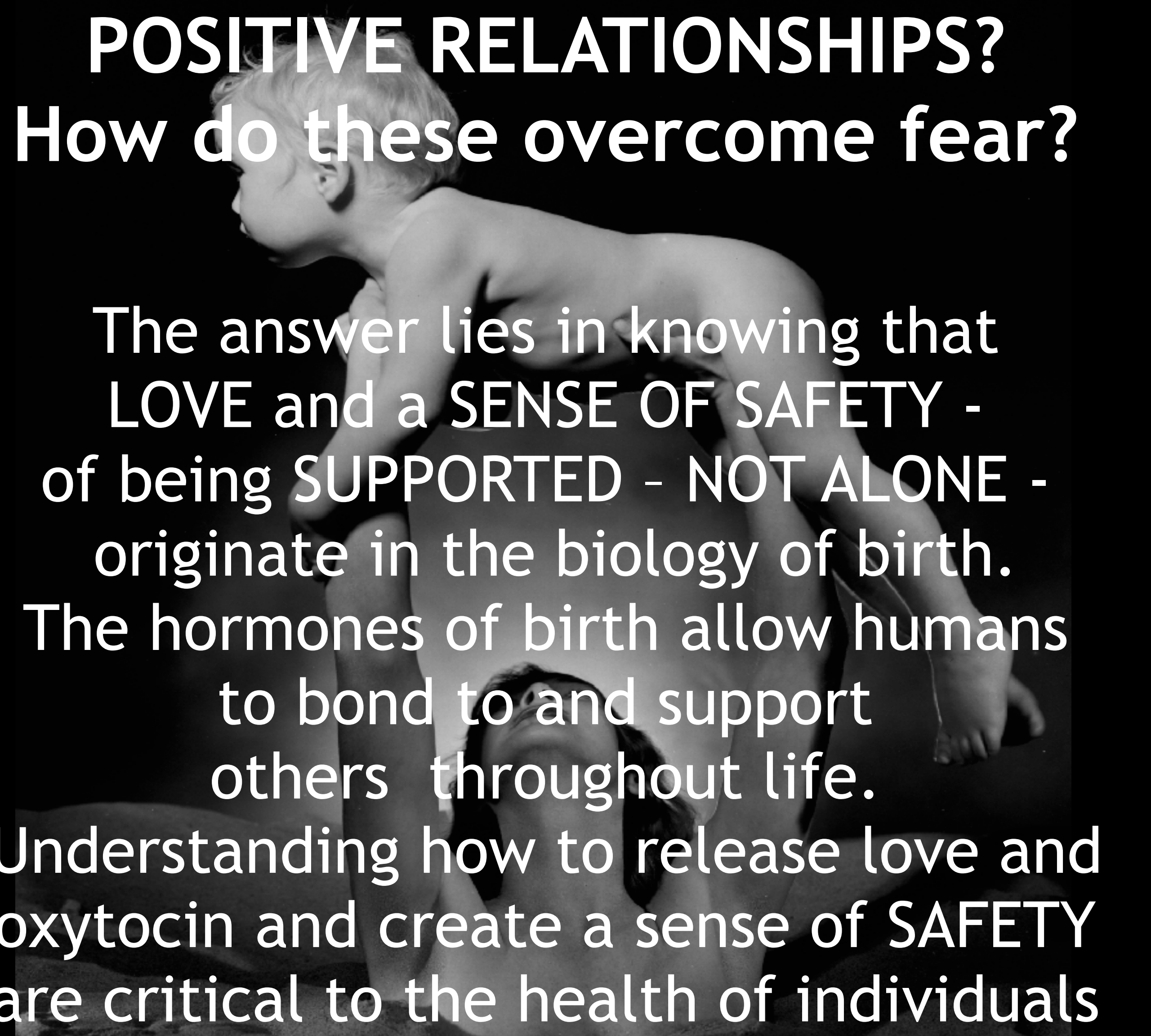
Physiological states, regulated  
by **OXYTCIN AND VASOPRESSIN**  
are elements in the dynamic  
dance between  
**LOVE and FEAR**



***CONTEXT of PERCEIVED -***







# What is the power of LOVE and POSITIVE RELATIONSHIPS? How do these overcome fear?

The answer lies in knowing that  
LOVE and a SENSE OF SAFETY -  
of being SUPPORTED - NOT ALONE -  
originate in the biology of birth.  
The hormones of birth allow humans  
to bond to and support  
others throughout life.  
Understanding how to release love and  
oxytocin and create a sense of SAFETY  
are critical to the health of individuals  
and the HEALTH OF BUSINESSES.



**“Nothing is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less.”**

***Marie Curie***

