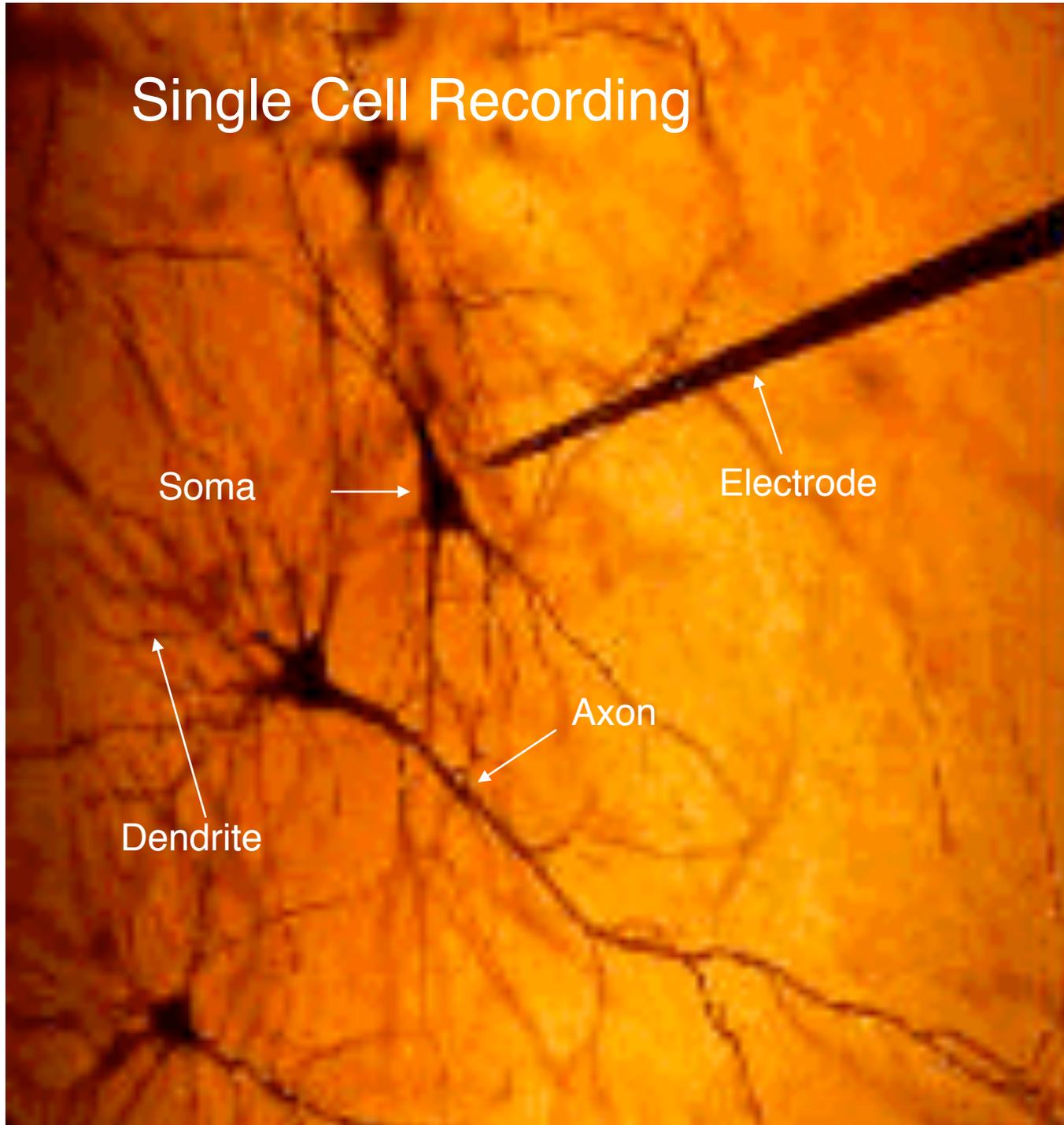


Single Cell Recording



INTRODUCTION

Computation

The essentials of a computational theory/
model

*What does it mean to say
the brain is a computer?*

Brain Subsystems

The brain has major
subdivisions each with a
separate distinct function

*What are these
functions?*

BRAIN BASICS

Neurons

The basic computing elements of the brain are its nerve cells

*How do they work?
-by themselves
-in circuits*

Memory

Most of the neurons form part of a memory system

What are the basic properties of this system?

Processing

The brain's processor system uses a very wide bus and a very slow instruction cycle

How does this subsystem work?

EMBODIMENT

Visual routines

The human brain acquires information via discrete gazes (fixations).

*How is gaze direction computed?
What information is acquired?*

Operating System

The brain has to map complex behaviors onto the body's resources

*How is this mapping accomplished?
How is multi-tasking handled?*

Motor routines

The body's musculo-skeletal system is complex but versatile

How is it controlled by the brain?

CONSCIOUS AWARENESS

Emotions	Hominids	Altruism	Consciousness
Emotions have a vital computational function	Humans have the largest brain volume/body weight ratio	Evolution is about survival of the fittest	We are all aware of our own existence
<i>What is it?</i>	<i>Why did human brains get so large?</i>	<i>Why help others who are not your kin?</i>	<i>Does this serve some computational purpose?</i>