Universidade de Brasília

University of Brasília
Information Science College

MIA – Multimodal Information Architecture

Msc. George Hideyuki Kuroki Júnior
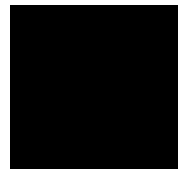Dr. Cláudio Gottschalg-Duque

reality is
MULTI **MODAL**
KRESS AND Van LEEUWEN (2001)

~~a mode language?~~

MESURED BY ENTROPY

SHANNON AND WEAVER (1963)

writing speaking singing

MODE → **WAY TO CONSTRUCT** → **MEANING**

INFORMATION EXPLOSION

BUSH (1979)

MULTIMODAL
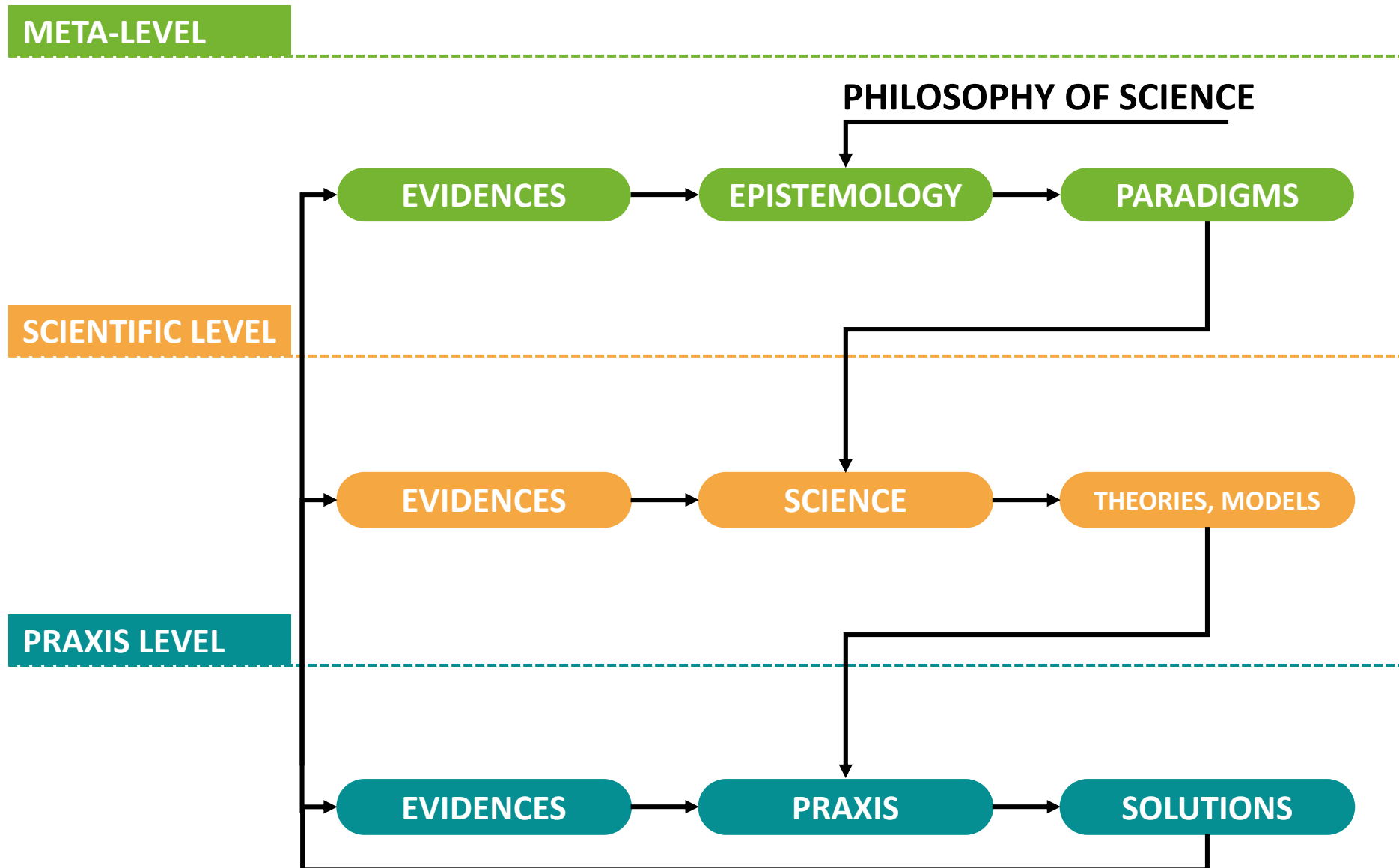**information**
architecture

ECONOMY

WILSON AND SPERBER (2002)

human mind looks for
RELEVANCE

METHODOLOGICAL COURSE
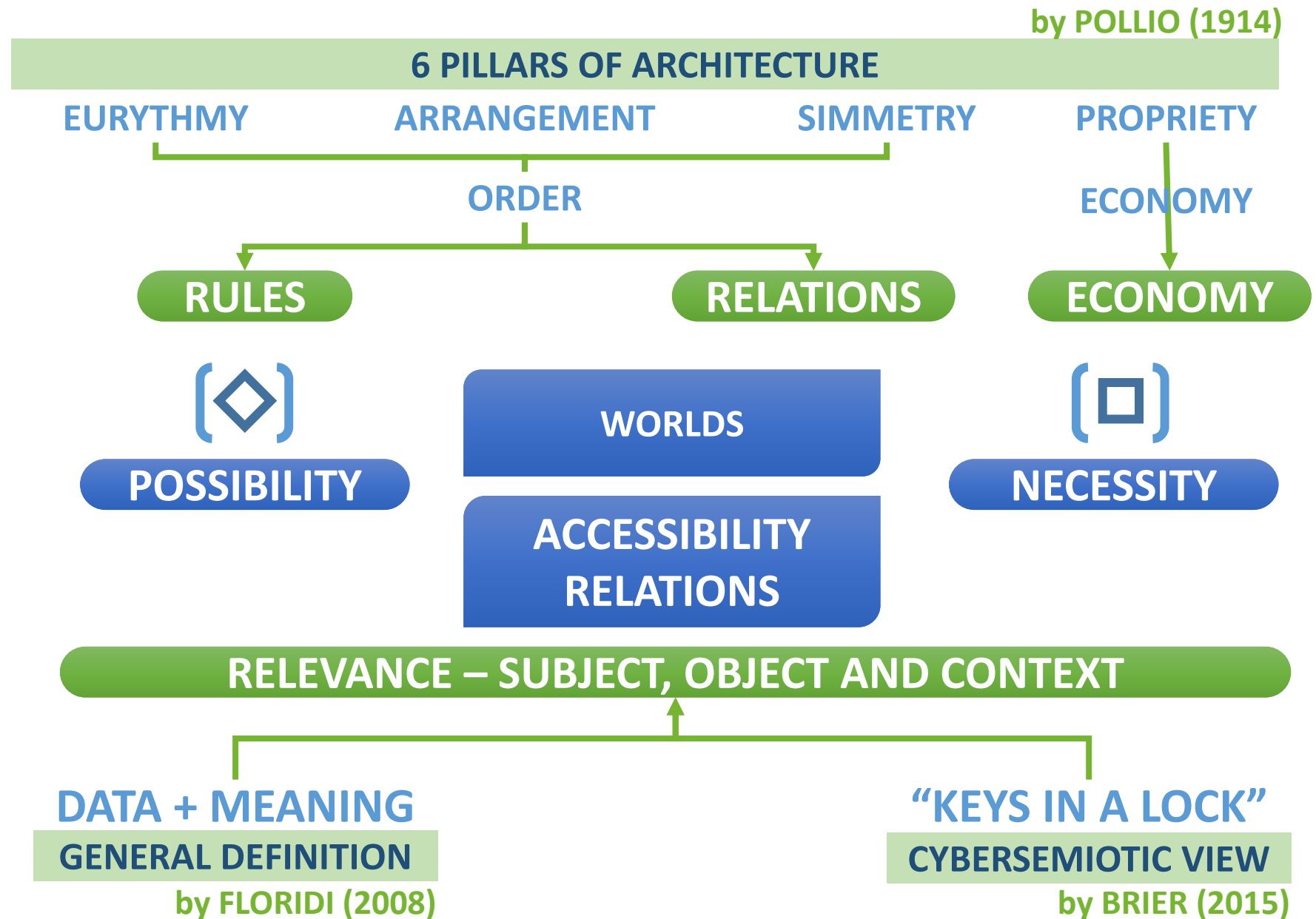
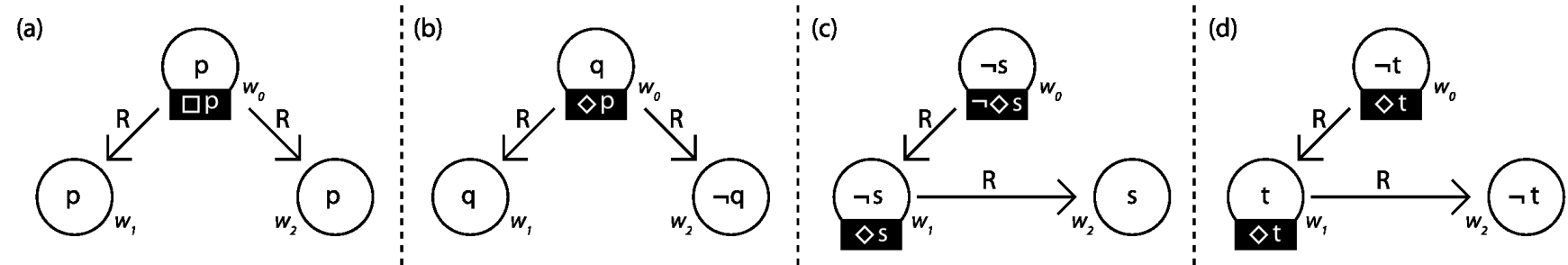**HIERARCHICAL FRAMEWORK**

Van GIGCH AND MOIGNE (1989)

META-LEVEL

PHILOSOPHY OF SCIENCE

EVIDENCES → EPISTEMOLOGY → PARADIGMS

SCIENTIFIC LEVEL

EVIDENCES → SCIENCE → THEORIES, MODELS

PRAXIS LEVEL

EVIDENCES → PRAXIS → SOLUTIONS

by POLLIO (1914)

6 PILLARS OF ARCHITECTURE

ARCHITECTURE

EURYTHMY   ARRANGEMENT   SIMMETRY   PROPRIETY

ORDER   ECONOMY

RULES   **RELATIONS**   **ECONOMY**

MODAL LOGIC

⟨◇⟩   ⟨□⟩

POSSIBILITY   **WORLDS**   **NECESSITY**

ACCESSIBILITY RELATIONS

RELEVANCE – SUBJECT, OBJECT AND CONTEXT

INFORMATION

DATA + MEANING   **"KEYS IN A LOCK"**

GENERAL DEFINITION   **CYBERSEMIOTIC VIEW**

by FLORIDI (2008)   by BRIER (2015)

(a) (b) (c) (d)

MODAL LOGIC
A SIMPLISTIC EXPLANATION

1. SUPPOSE THAT WORLDS W_0, W_1, W_2, W_3 ARE SUBJECTS;

2. PROPOSITIONS "P", "Q", "S" AND "T" ARE CONVICTIONS ABOUT A SUBJECT LIKE "THIS IS A CANARIAN SINGING";

3. THE ARROW "R" INDICATES AN ACCESSIBILITY RELATION BETWEEN TWO SUBJECTS (LIKE W_0 ACCESS W_1 CONVICTIONS)

ARCHITECTURE:
ADEQUATIONS, AND PROPERTIES
SCIENTIFIC GROUNDING

4 ADEQUATION OF CONCEPTS

4 PROPERTIES FOR THE CONCEPT OF "ARCHITECTURE"

INFORMATION:
ADEQUATIONS, AND PROPERTIES
SCIENTIFIC GROUNDING

3 ADEQUATION OF CONCEPTS
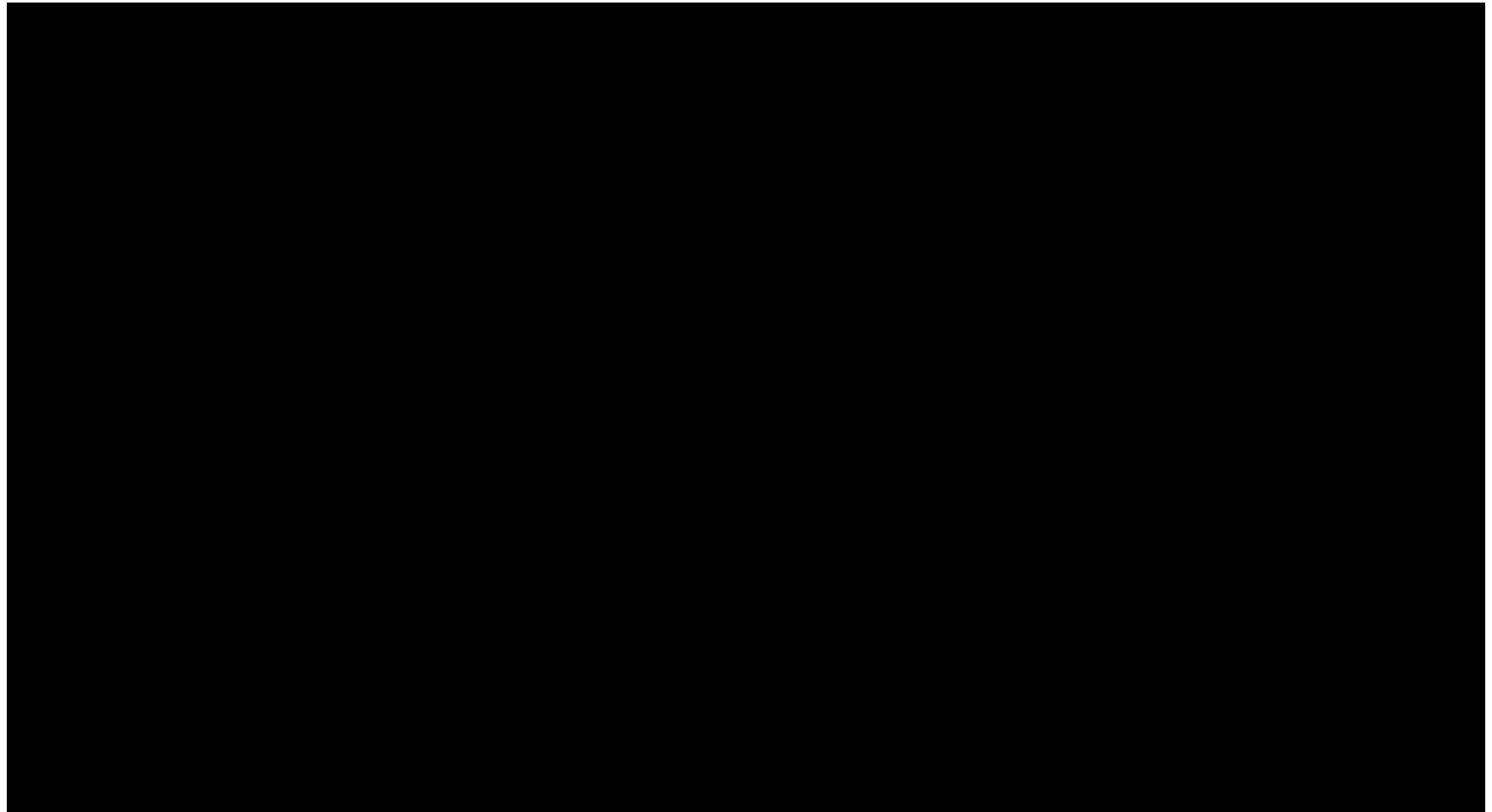
2 PROPERTIES FOR THE CONCEPT OF "INFORMATION"

"THE CHARACTERISTIC PRESENTED BELONGS TO A BIRD CALLED NORTHERN CARDINAL" **?**
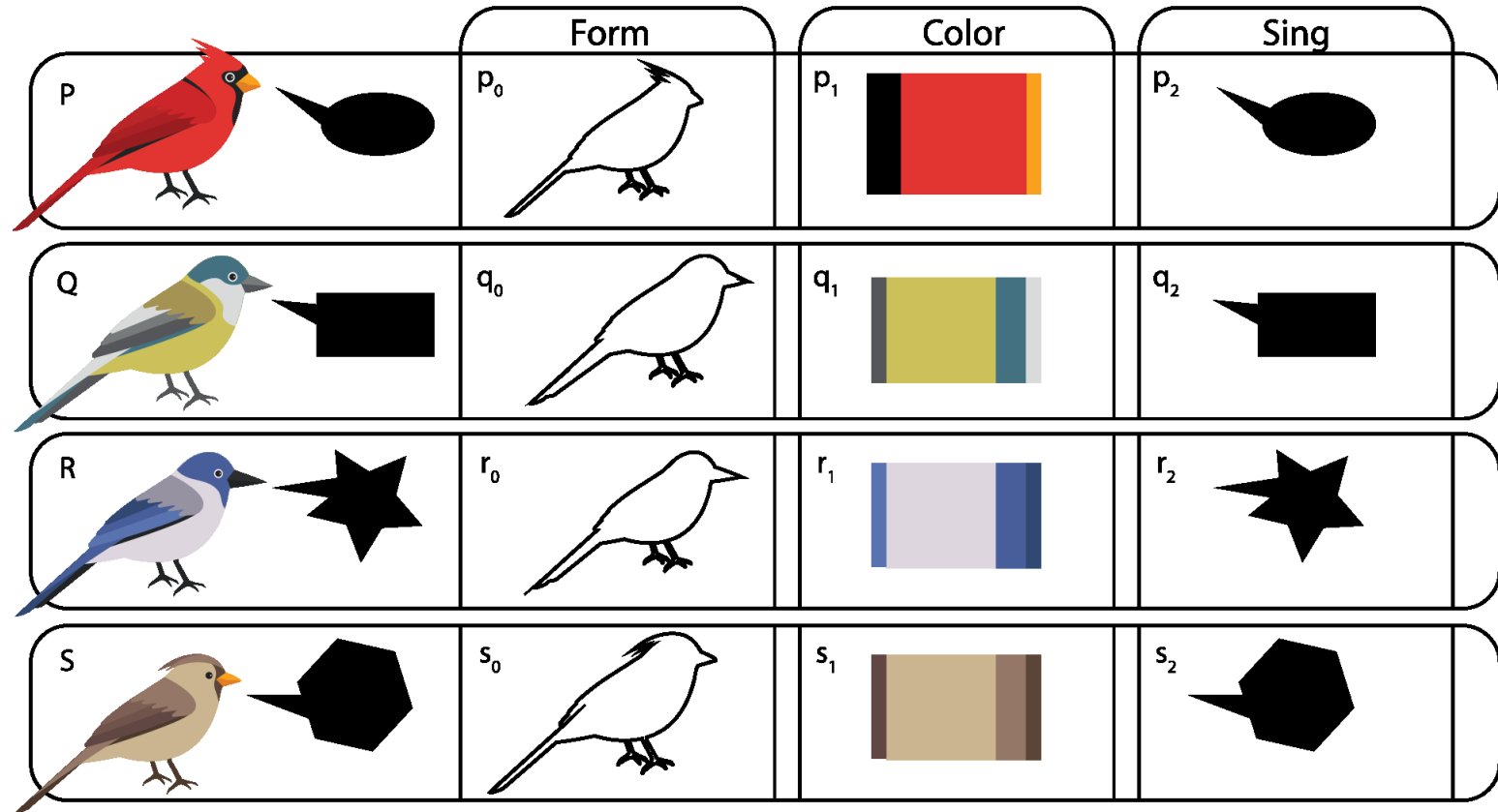
"P" FOR "YES, IT IS";

"¬P" FOR "NO, IT ISN'T";

MULTIMODAL INFORMATION ARCHITECTURE
BUILDING THE CONCEPT

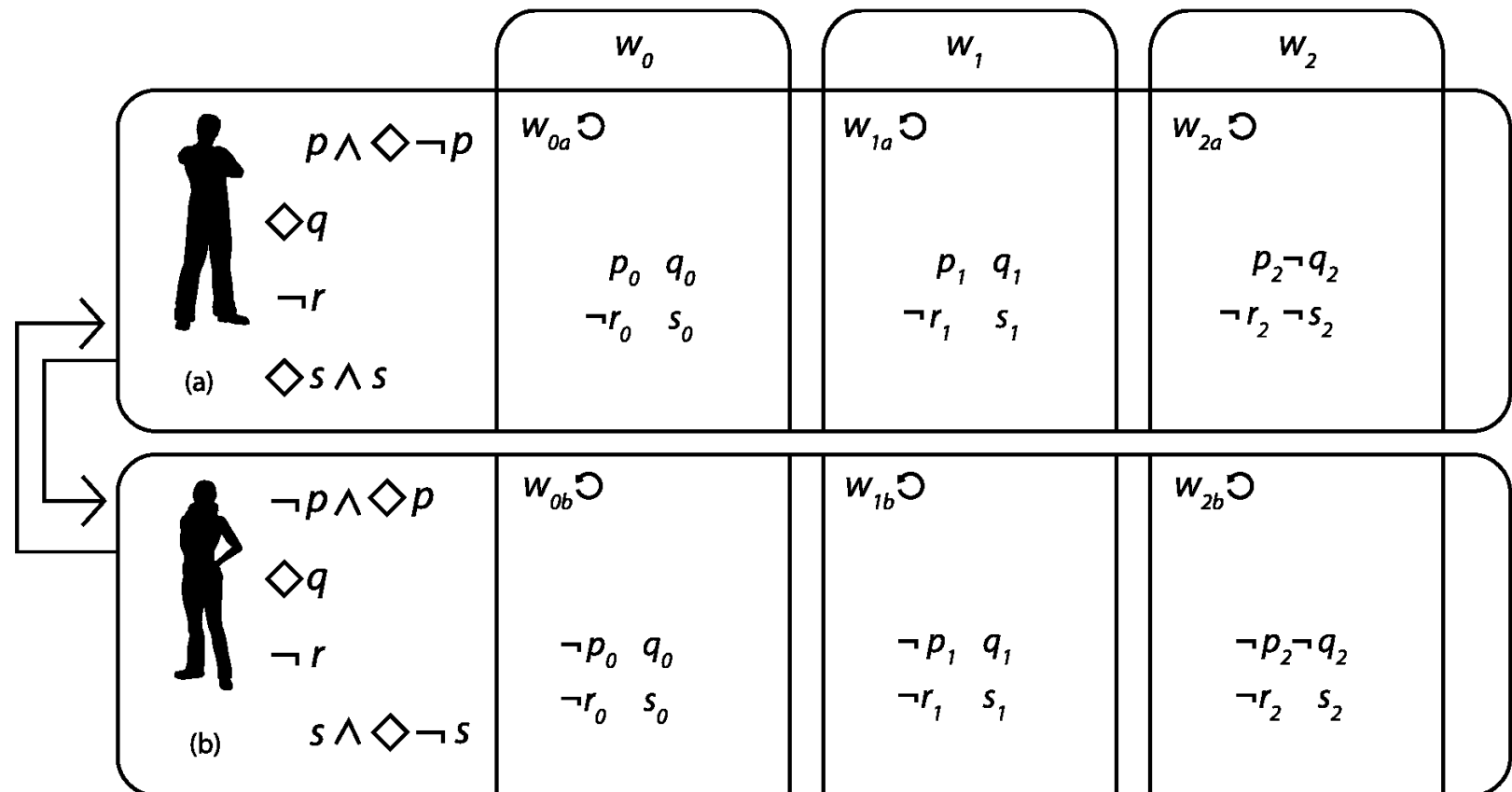# MULTIMODAL INFORMATION ARCHITECTURE
BUILDING THE CONCEPT

MULTIMODAL INFORMATION ARCHITECTURE
BUILDING THE CONCEPT

		w_0	w_1	w_2
(a)	p $\Diamond q$ $\neg r$ $\Diamond s$	w_{0a} ↻ p_0 q_0 $\neg r_0$ s_0	w_{1a} ↻ p_1 q_1 $\neg r_1$ $\neg s_1$	w_{2a} ↻ $p_2 \neg q_2$ $\neg r_2$ s_2
(b)	$\neg p$ $\Diamond q$ $\neg r$ s	w_{0b} ↻ $\neg p_0$ q_0 $\neg r_0$ s_0	w_{1b} ↻ $\neg p_1$ q_1 $\neg r_1$ s_1	w_{2b} ↻ $\neg p_2 \neg q_2$ $\neg r_2$ s_2
(c)	p q $\Diamond r$ $\neg s$	w_{0c} ↻ p_0 q_0 $\neg r_0$ $\neg s_0$	w_{1c} ↻ p_1 q_1 r_1 $\neg s_1$	w_{2c} ↻ p_2 q_2 $\neg r_2$ $\neg s_2$

MULTIMODAL INFORMATION ARCHITECTURE
BUILDING THE CONCEPT

w_0 | w_1 | w_2

(a)

$p \wedge \Diamond \neg p$

$\Diamond q$

$\neg r$

$\Diamond s \wedge s$

$w_{0a} \circlearrowright$ p_0 q_0 $\neg r_0$ s_0

$w_{1a} \circlearrowright$ p_1 q_1 $\neg r_1$ s_1

$w_{2a} \circlearrowright$ $p_2 \neg q_2$ $\neg r_2$ $\neg s_2$

(b)

$\neg p \wedge \Diamond p$

$\Diamond q$

$\neg r$

$s \wedge \Diamond \neg s$

$w_{0b} \circlearrowright$ $\neg p_0$ q_0 $\neg r_0$ s_0

$w_{1b} \circlearrowright$ $\neg p_1$ q_1 $\neg r_1$ s_1

$w_{2b} \circlearrowright$ $\neg p_2 \neg q_2$ $\neg r_2$ s_2

MULTIMODAL INFORMATION ARCHITECTURE
BUILDING THE CONCEPT
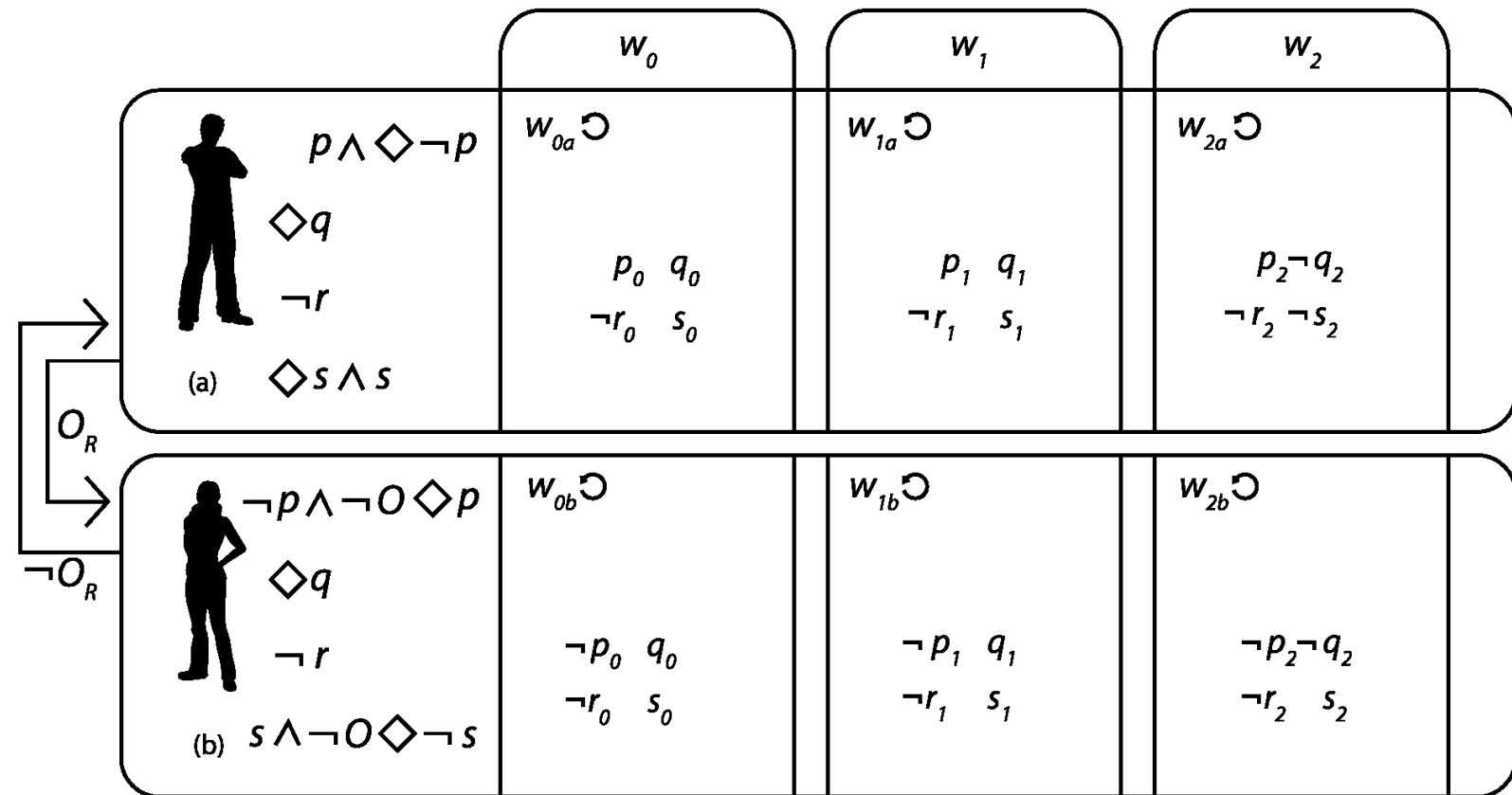
MULTIMODAL INFORMATION ARCHITECTURE

DEFINITION OF THE CONCEPT

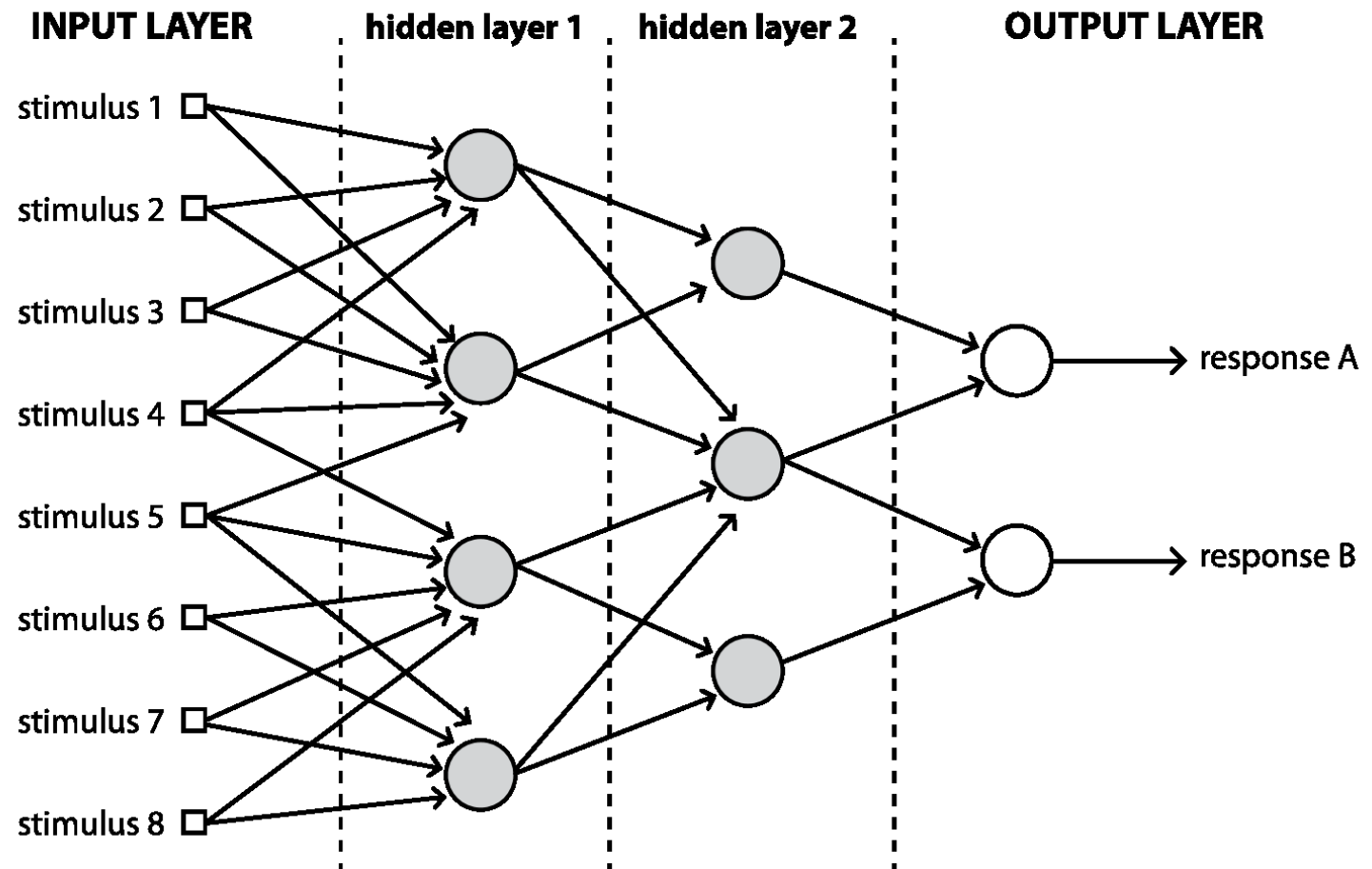| PROPERTY	CONTRIBUTION ON THE DEFINITION
1	DISTINCTION AND CONSTRUCTION OF ARCHITECTURAL WORLDS
2	THROUGH ASSUMPTION OF RELATIONAL MODELS
3 AND 4	GROUPED BY SPACE-TIME CONTEXTS
5	OF INFORMATION STATES
6	CORRELATED OR NOT

MULTIMODAL INFORMATION ARCHITECTURE

PATH FOR CONVERSATIONS BETWEEN INFORMATION SCIENCE AND ARTIFICIAL INTELLIGENCE

PRAXIS LEVEL

MULTIMODAL INFORMATION ARCHITECTURE

PATH FOR CONVERSATIONS BETWEEN INFORMATION SCIENCE AND ARTIFICIAL INTELLIGENCE

Universidade de Brasília | **University of Brasília**
Information Science College

MIA – Multimodal Information Architecture

Msc. George Hideyuki Kuroki Júnior
Dr. Cláudio Gottschalg-Duque