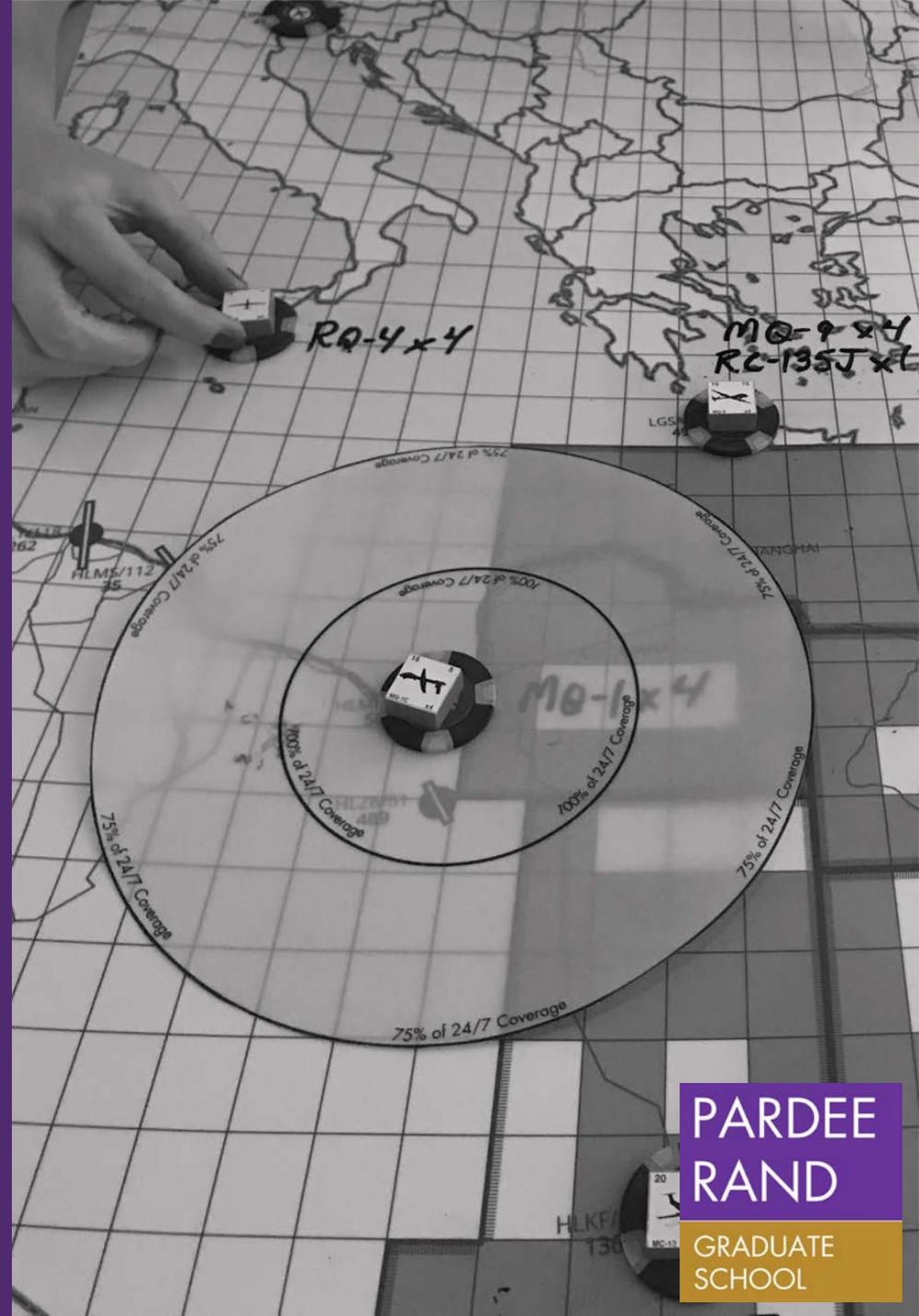


Building Better Games for National Security Policy Analysis

Elizabeth M. Bartels

July 2018



Game plan for this workshop

- Provide you with an overview of project and draft framework
- Conduct appropriateness rating exercise with my games
- Conduct appropriateness rating exercise with your games
- Feedback on the framework and next steps

Frameworks focus on problem or final form of the game, not overarching structure or logic of inquiry

Policy Problem

COA Analysis * Concept Development
Capability Assessment * Pol/Mil Crisis



Specific Design Choices

Medium

Seminar * Card * Board * Computerized

Format

Single Sided * Two-Sided * Multi-sided

Adjudication

Expert * Matrix * Dice * CRT * Model-assisted



“There is no recipe for translating a game’s objectives into its mechanics... ultimately the designer’s talent dictates how and how well the translations from objectives to mechanics works”

-Perla, *The Art of Wargaming*

MISSING GUIDE TO GAME DESIGN



STRAW (Strategic Air War Game)

Military Factors

Regional defense by fighters
Local defense by missiles
Bomber call-out
Bomber losses to fighters (- and out)
Bomber losses to missiles
Fighter losses to bombers
Survivability of aircraft
Strategic ratio
Weather
Bombing order
Intelligence
Strike reinforcements
Area power reinforcements
Chance

Economic Factors

Basic materials and industrial activities
Input-output ratios
Capital investment
Transportation by
Urban growth due to bombing
Production
Defense demand
Supply and demand ratios
Reconstruction

Improve the rigor of games that inform national security policy by developing a framework specifying different types of information produced by games

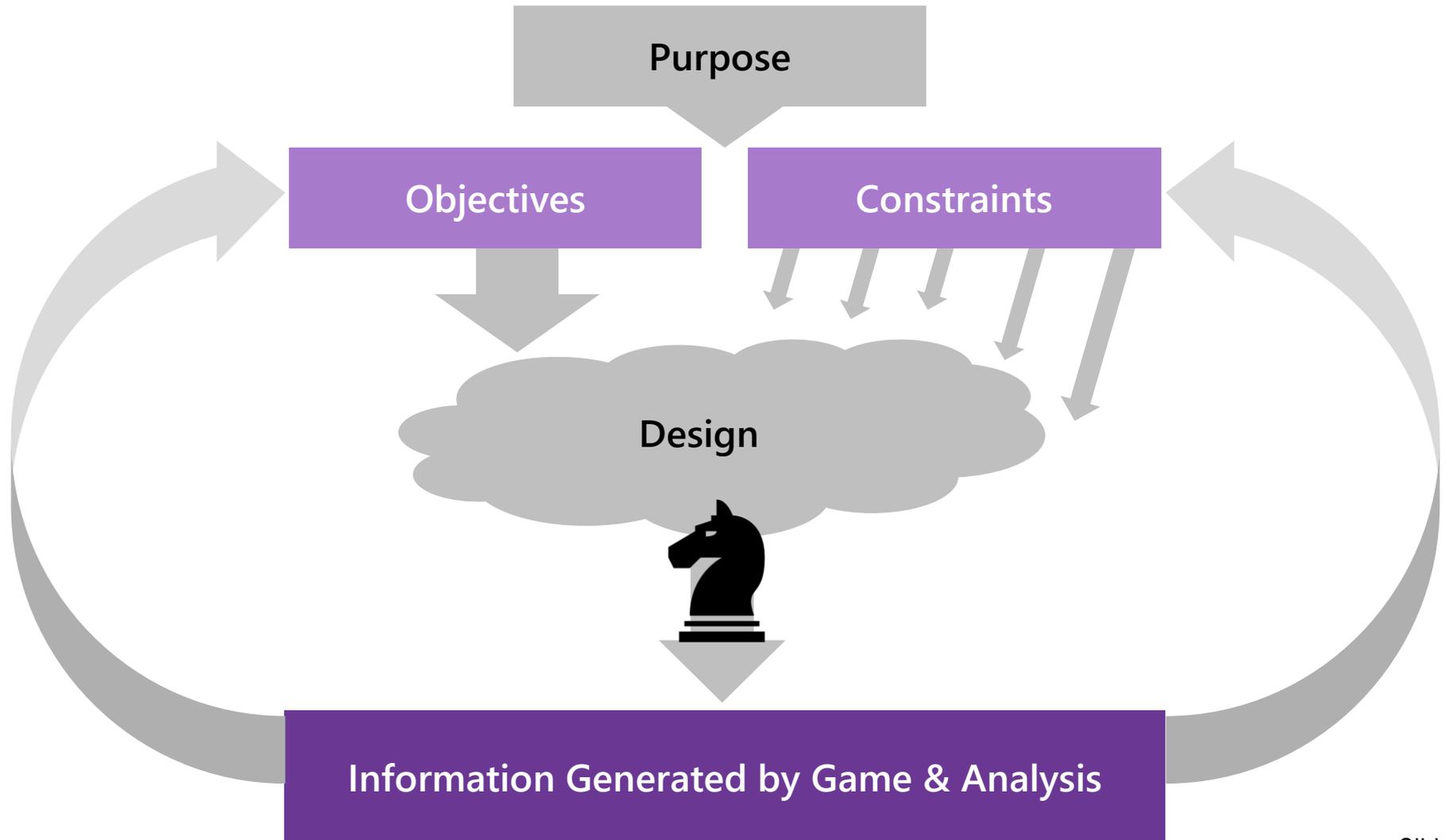
DISSERTATION OBJECTIVE

Framework is focused on gaming for research, not teaching and communication

	Games to create knowledge	Games to share knowledge
Problem is well-defined	Analytical Games	Training Games
Problem is starting to be defined	Discovery Games	Educational Games

Source: Bartels, 2014

Framework describes what information comes from the game, shaping objectives & design constraints





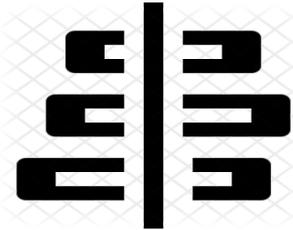
Designed as a set of archetypes, or ideal models of information that can be learned from games

Not intended to be exclusive (game can resemble more than one type)

May not be comprehensive, but should cover most games

Draft Framework

Draft Framework Features Four Archetypes



Type

Understanding the Problem

Structured Comparison

Innovation

Evaluation

Description

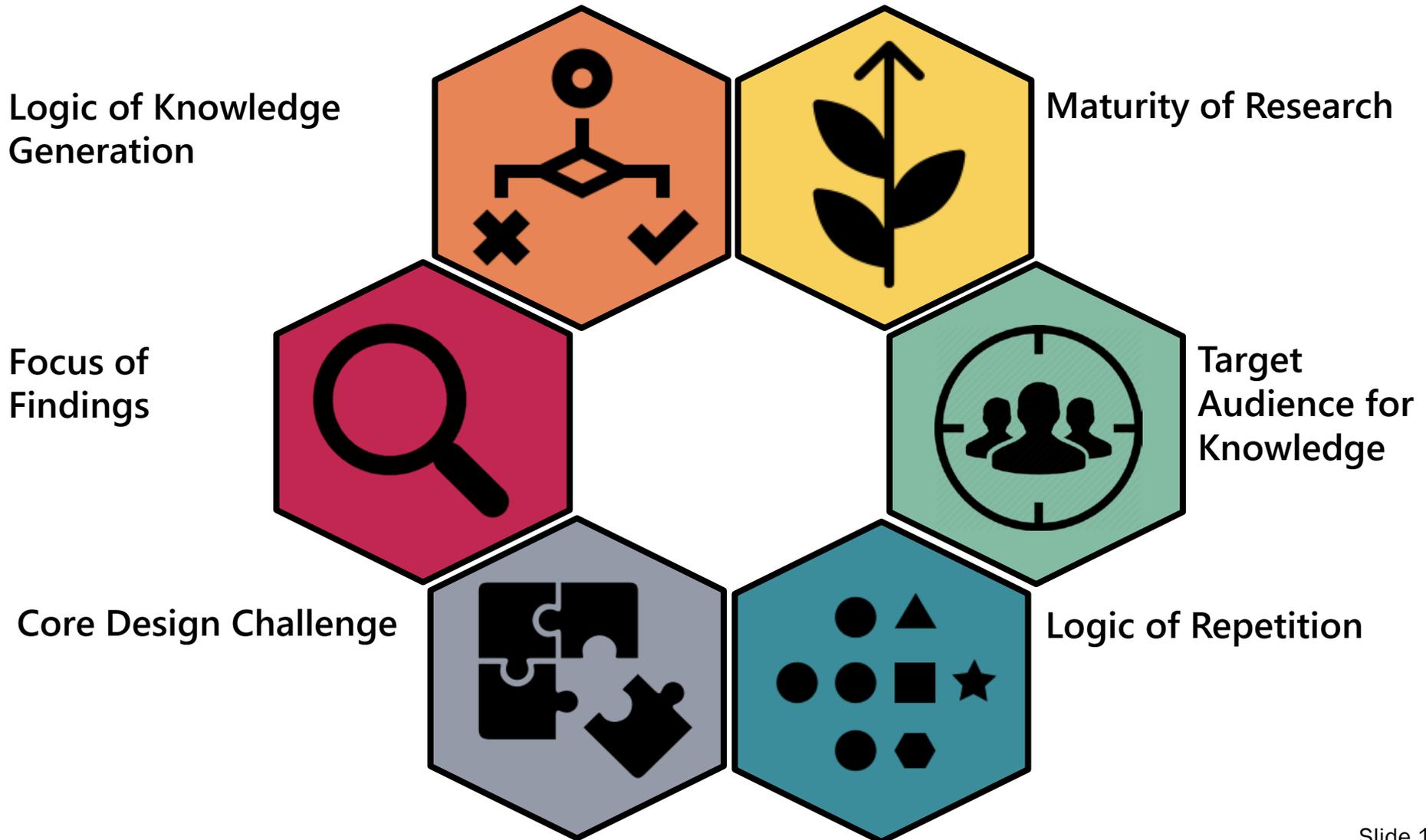
Elicit and synthesize players' mental models of the problem, and how the problem evolves over time

Compare decisionmaking under different conditions to detect similarities and differences

Develop new solutions by enabling different decisions to be made by players

Measure performance and/or efficacy of decisions based on a standard

Archetypes Differentiated by 6 Distinguishing Characteristics



During this workshop, we will be scoring game description

Given a brief description of a request for a game, I'd like you to assess:

1. Is this appropriate to game?
2. How appropriate is it to apply each of the four archetypes?
3. Is there an alternative type that would be more appropriate?

Games are appropriate when the expected value to sponsors and participants of the information produced exceeds the expected value of the

Workshop emphasized key point about how the framework should be understood

- The Framework helps designer shape objectives, not a replacement for working with a sponsor to scope objectives
- Framework synthesizes existing practice, but can't replicate or replace value of an expert
- Specific language is critical—terms related to research (ex. validation, verification, confidence) do not mean the same thing across the community

Workshop supported general design

- All four categories reflected games most participant had seen or could imagine
- Most games typed fell in more than one type, supporting choice of archetypes
- Participants did not have an alternative type they thought was missing

Workshop highlighted areas for additional work

- Understanding the Problem is the most populated type—does it make sense to break down further?
- Structured Comparison and Evaluation are the most similar, is there a need to clarify the differentiation?
- Evaluation is the most problematic type—what caveats are needed to be used appropriately?
- Framework is oriented to questions from the perspective of blue, do games focused on red and others need a different frame?
- Do competitive and cooperative games fit into the typology in the same way?

PARDEE
RAND

GRADUATE
SCHOOL