GAT 315

3D Game Design I

Instructor

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Office Hours

- Tuesday 3pm-4:30pm
- Thursday 1pm-3pm

Multiplayer Fellowship

- ❑ Interaction Model
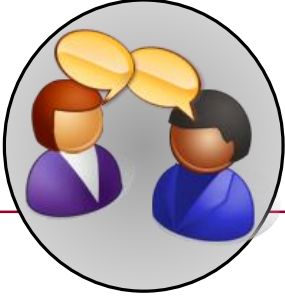- ❑ Interaction Scope, Frequency, & Persistence
- ❑ Designing for Multiplayer

MULTIPLAYER FELLOWSHIP

Mechanics of Interdependence

Fellowship mechanics often express themselves as systems that drive interdependence between the player and other characters or things in the environment.

| Fellowship Subtype	Multiplayer Mechanics
Affiliation: loyalty, honor, duty, respect, admiration, friendship, family, affection, romance	Guilds (guild name, sigil, etc.) Friends List (chat and mail) Mega-Guilds (meta-game affiliations)
Cooperation: communication, coordination, organization, trust, inspiration, leadership	Teams (shared play with role specialization) Raids (coordination of teams) Bounded Movement (e.g. everyone must stay on screen) Private Chat Channels Classes (role specialization) Guilds
Benefaction: service, protection, providing, training, teaching, compassion, empathy, sacrifice	Guild Banks Allegiances Teaching/Helping

CLASS DISCUSSION
Multiplayer Fellowship Mechanics

Interaction Model

- Multiplayer games require an interaction model that is supplemental to the standard single player activities. Generally speaking, this interaction model looks something like this:

| Player A	Player B	Player A
Initiated by A	Reciprocated by B	Reciprocated by A
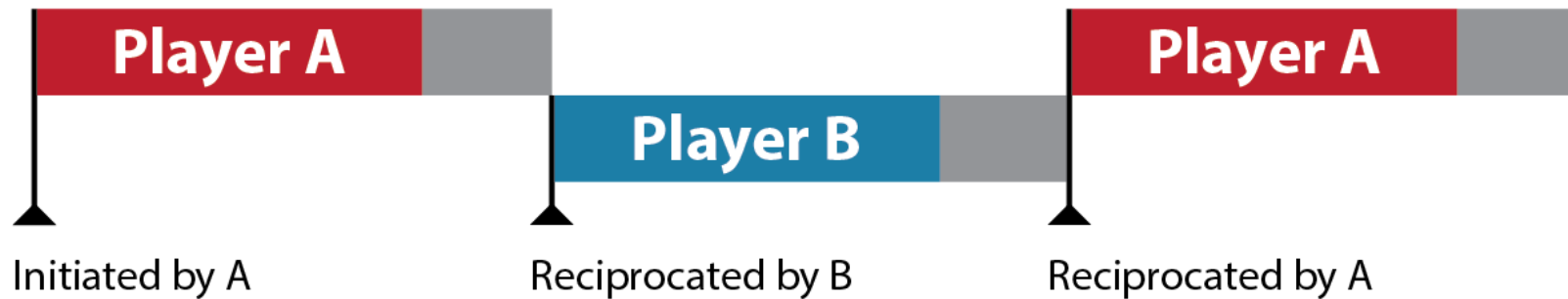
- This is the multiplayer loop that is layered on top of the standard single player loops, and is based on communication theory explored by Chris Crawford.

http://www.gamasutra.com/blogs/DanielCook/20140104/208021/What_Ive_learned_about_designing_multiplayer_games_so_far.php

Frequency of Interactions

- The frequency of interactions required to create a sense of concurrency will vary by the game.
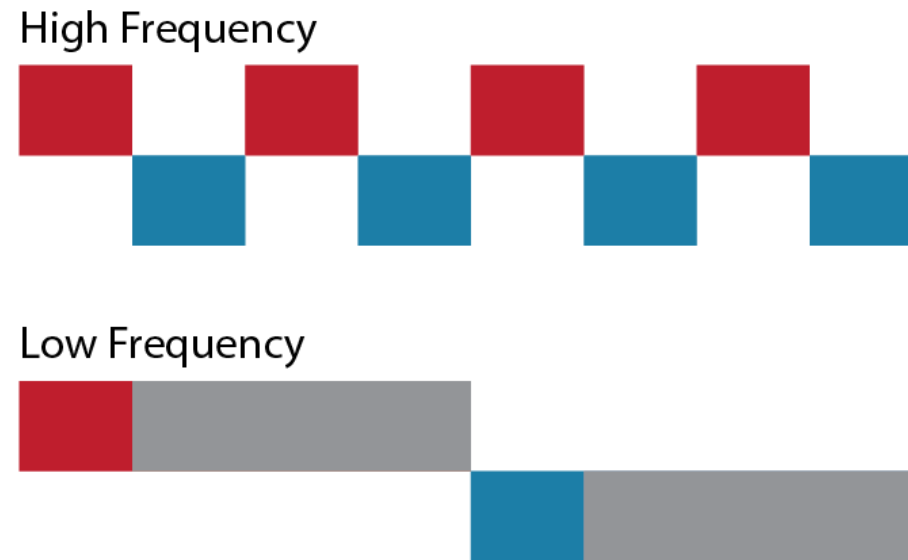
- More frequent interactions results in higher information transmission between the players, which facilitates relationship formation.

http://www.gamasutra.com/blogs/DanielCook/20140104/208021/What_Ive_learned_about_designing_multiplayer_games_so_far.php

Interaction Intervals

- As certain frequency thresholds are reached, the players' perception of the nature of the interaction changes. Changing the intervals between interactions results in dramatically different forms of multiplayer play.

Real time

Asynchronous

Time gap
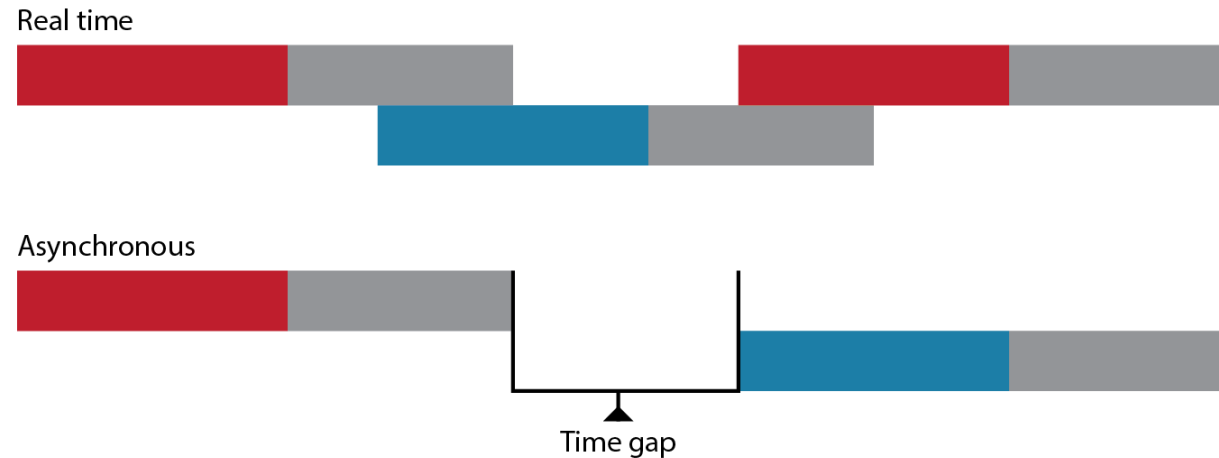
- Players perceive interactions as real-time when the frequency reaches the point where a player sees a response to their actions before they have finished or perhaps even started another interaction.

Multiplayer Spectrum

Real-Time Players are continually interacting from moment to moment.	**Fully Synchronous** Players are playing concurrently, but interactions occur at fixed intervals.	**Turn Based** Players are not playing while others are playing, instead waiting their turn.	**Asynchronous** Players are playing concurrently, but interactions may occur at irregular intervals.	**Session Asynchronous** Players are often not playing concurrently, with interactions happening between sessions.
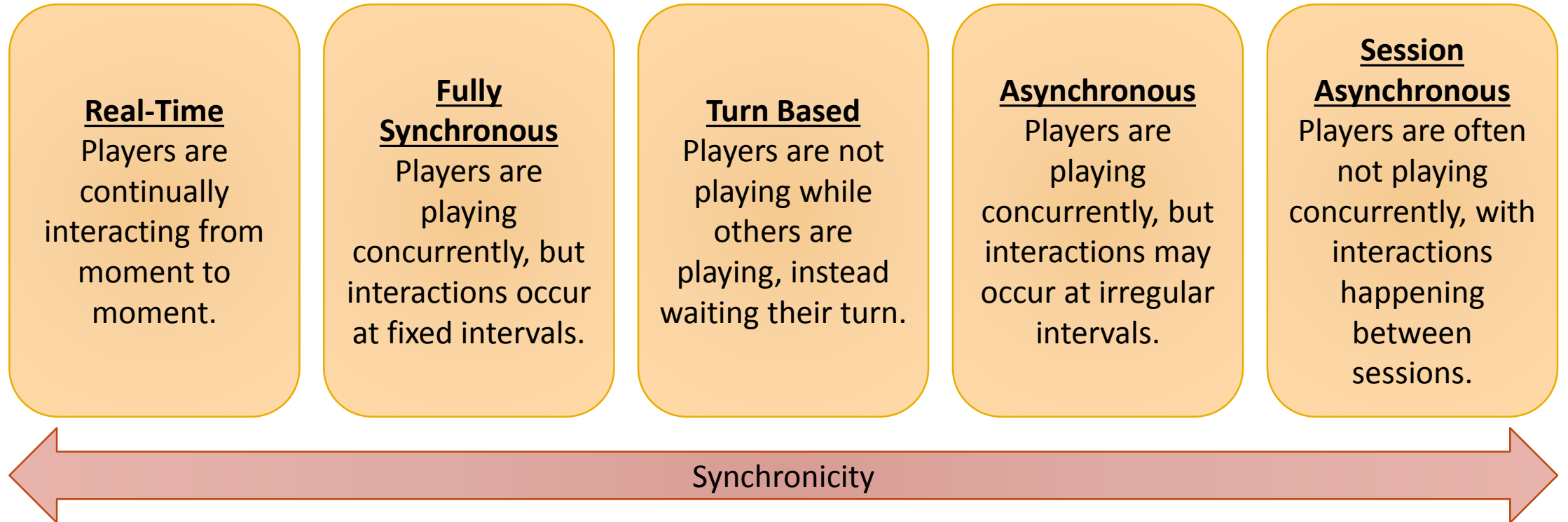
Synchronicity

- There is a spectrum of multiplayer models ranging from more synchronous to more asynchronous. Different levels of synchronicity require different techniques to establish fellowship.

Types of Interactions

- **Avatar Interaction**
  - Two or more avatars interact with one another. Examples: Quake, Journey, Castle Crashers

- **Environment Interaction**
  - Players also interact through the intermediate environment. Examples: Minecraft, Bomberman

- **Decoration & Display**
  - Players signal status, affiliations and history via what they wear or how they decorate their weapons, pets and houses.

- **Economic**
  - Players give, trade or pay for various resources to transform or transfer to another player. This could be a sale or spending mana to "buy" health for another player.

- **Communications**
  - **Text** – Chat feature
  - **Voice** – Adds vocal nuance and information about the other person (emotions, age, gender, etc.)
  - **Body Language** – High bandwidth communication in couch play or video chat

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Interaction Scope

The scope of interactions change the nature of interactions as the number of players increase

- **Partnership** (2 players): One-on-one communication, relationships, status, gifting, trade, cooperation, and competition

- **Party** (Tiny: 3-4): Coordination, unofficial leadership, interpersonal dynamics, often unstable

- **Team** (Small: 5-12): Group vs group interactions, official leadership, role specialization, group self-reliance

- **Band** (Medium: 13-50): Factions, barter economies, othering/stereotyping, and banishment. Unstable dynamics that tend to grow into a Tribe or splinter into Teams

- **Tribe** (Large: 40-150): Hierarchical leadership, currency-based economies, role enforcement. Ad hoc systems of government, codification of social norms. 50-60 is often the sweet spot. Average guild size: 61

- **Clan** (Very Large: 90-250): Merchant classes, market-based pricing, codified systems of government, underclasses, celebrity, propaganda. This is the point at which a players is guaranteed not to know everyone and official systems are required to make social norms work.

- **Horde** (Extremely Large: 200-1000): Usually an affiliation of Clans. Distributed leadership, often unstable and consolidate into a Nation or splinter into Clans

- **Nation** (Massive: 1,000+): Polling, city-scale production efforts. There are very few dynamics that happen at this scale that do not also occur with Clan or even Tribe groups.

Some material from: http://www.gamasutra.com/blogs/DanielCook/20140104/208021/What_Ive_learned_about_designing_multiplayer_games_so_far.php

Dunbar's Number

- Dr. Robin Dunbar is an evolutionary psychologist and anthropologist.

- In his paper *Co-Evolution Of Neocortex Size, Group Size And Language In Humans* he hypothesized:

  o ... there is a cognitive limit to the number of individuals with whom any one person can maintain stable relationships, that this limit is a direct function of relative neocortex size, and that this in turn limits group size ... the limit imposed by neocortical processing capacity is simply on the number of individuals with whom a stable inter-personal relationship can be maintained.

Dunbar's Number

- This number is commonly estimated to like between 100-250

- The median of 150 is called Dunbar's Number.

- Often, this is misunderstood, as 150 is only a stable number when the group is highly incentivized to remain together (intense environmental or economic pressure).

- Stable Group Size: 40-80, median 50

Group Satisfaction

Satisfaction

Size of Group
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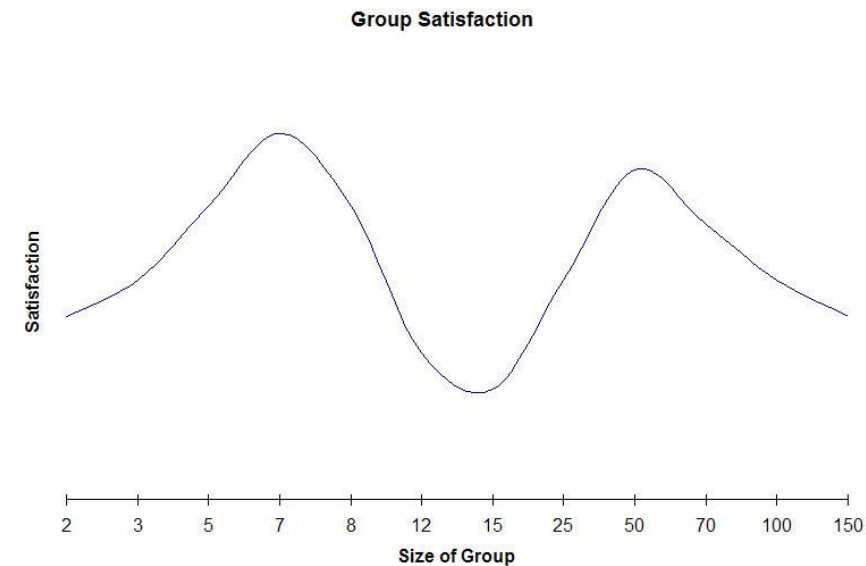
Group Persistence

- Groups of various sizes can have different levels of persistence that you should consider when designing systems:

	Transitory	Semi-Persistent	Persistent	Meta-Persistent
Partnership (2)	Informal Collaboration, Helping		Game Friends List	Platform Friends List, Social Networks
Party (3-4)	Parties			
Team (5-12)	Parties/Dungeon Parties	Events	Teams	
Tribe (40-150)	Raid	Events	Guilds	Mega Guilds/Player Associations
Clan (90-150)		Events	Guild Alliances	Mega Guilds/Player Associations

Reciprocity Models

- Social expectation of a future return of gifts, based on 1965 work of anthropologist Marshall Sahlins. There are three basic types:

  - **Generalized Reciprocity**
    - No expectation of immediate return
    - Reciprocity resides in satisfaction, social closeness. Common between friends and in helping behavior
  - **Balanced Reciprocity**
    - Expectation of a return gift at an undefined, but near, future time.
    - This is where social game gifting tends to reside and gifting at the Tribe level.
  - **Negative Reciprocity**
    - Barter systems, bargaining for more valuable thing (to you) than less valuable (to you) thing that you have
    - Typical interactions between strangers and at the Clan or higher group level. Also typical of auction houses

Some material: http://www.raphkoster.com/wp-content/uploads/2011/02/Koster_Social_Social-mechanics_GDC2011.pdf

Relationship Strength

- Not all player interactions are equal.

  o Strangers are understood through simple, stereotype-based models.
  o Close friends are understood through complex individual models built up over thousand or millions of minute generalized or balanced reciprocation sequences.

- Games can help create fellowship by promoted repeated positive interactions (generalized or balanced reciprocity). The higher the frequency, the quicker the relationship evolves.

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Relationship Strength

- Relationship strength is often based on trust, built through reciprocity.

- Trust diminishes as group thresholds are passed and is non-transferable.
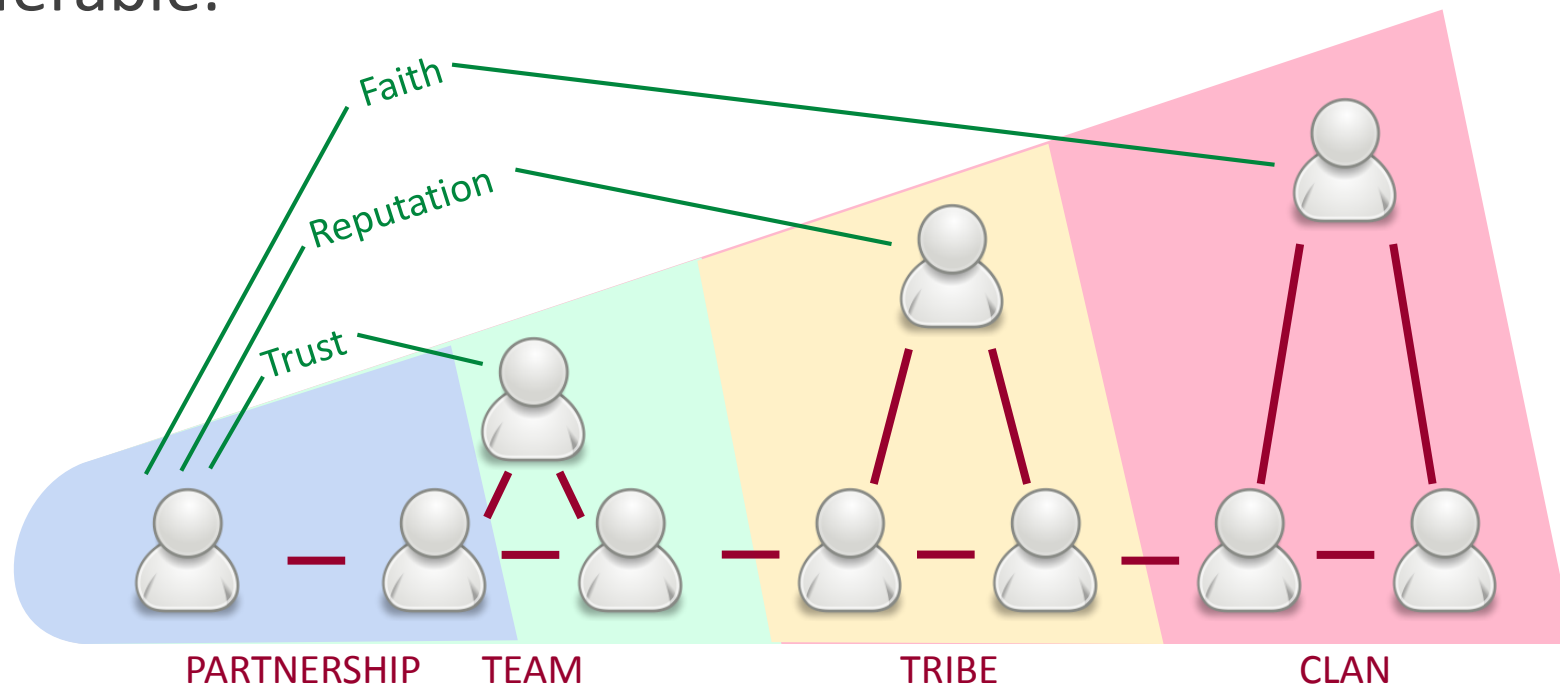
Faith

Reputation

Trust

PARTNERSHIP TEAM TRIBE CLAN

http://www.raphkoster.com/wp-content/uploads/2011/02/Koster_Social_Social-mechanics_GDC2011.pdf

DESIGNING MULTIPLAYER FELLOWSHIP

Design Considerations

- When designing multiplayer systems, it is useful to consider the following questions:

  o **Who does this action impact or target?**
    - This gives a rough estimate of the group size your system needs to support.
  o **Is a larger group size necessary for this behavior to emerge?**
    - If not, you can target your design at multiple instances of a smaller group size.

- Transition points for group sizes fluctuate based off contextual factors.
  o For example, the transition to the dynamics of a Clan (very large group of 90-250) can occur as soon as 60 or 70 people if there are weak communication channels that stress a player's ability to maintain relationships.

- Large groups are inevitably composed of smaller groups. So as systems are added, the dynamics of lower number groups are still present.

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A Few Mechanics by Group Size

	Partnership	Team	Tribe	Clan
Communications	Whisper/Tell	Chat Channel	Message Board	
Group Formation	Friends List	Parties	Guilds	Diplomacy
Trade	Gifting Buffing Secure Trade		Guild Banks Auction House Organized Resource Extraction	Inter-Guild Trade Taxation
Property	House		Guild Hall Territory Control	Multiple Guild Halls?
Interactions	Cooperative Play	Role Specialization Tournaments Events	Mission Specialization Guild Leaderboards	
Customization			Guild Sigil Guild Hall Decor	Monuments?
Leadership		Leader	Guild Roles Membership Levels	
Social Norms	Egalitarian	Egalitarian	Ruling Class	Emperor?

PASES Model

- Raph Koster proposed five general ways of building large, shades-of-gray social structures in multiplayer games:
  - Politics: influence and control
    - Elections and roles
    - Reputation/Influence/Fame
  - Arts
    - User Generated Content
  - Science: figuring out how things work
    - ARGs/Puzzles
    - Strategy Guides
  - Economics
    - Services
    - Arbitrage
    - Supply Chains
  - Sociology
    - Teamwork

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See You Next Class