

Gaming Timeline: An Exploratory Study of “Play” History and Conceptual Framework on Video-Games and Tourism

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Introduction

The word play has been defined to fit aspects of interactions between homo-sapiens/mammals as term of interplay. Webster defines play as the “conduct, course or action of a game” (Merriam-Webster, n.d.). There is a variety of literature explaining the formation of “play” and culture. Throughout history games have been used to enhance interactions within social groups. In the article *The Anthropological Study of Human Play*, Edward Norbeck examines the relevance of anthropology and play, as well as the use of “play” and culture. The word “play” was found to be associated with pleasurable behaviors such as *wit* and *humor*, Norbeck also identifies “play” among human beings as universal. A topic concerning human play is the viewpoint on play and its social psychological problems in western Society. Many of the concerns of “play” as it associates its intentions with playing games, the use of inhabited play can lead to psychological and social disturbance. The western viewpoint strongly disapproves the use of this uncontrolled behaviors as it can cause a societal disturbance. Although the role of play has been limited to games such as a game of football or a game of checkers, the universal appeal of the interaction of play is supported by an adaptive survival human behavior. Johann Huizinga states “play behaviors has adaptive significance for the individual by broadening the breadth of experience the individual has to draw on in meeting the challenge of change” (Norbeck, 1974. Pg6). While examining the role of play, the universal interaction of play leads to enriching the psychology and social psychology disciplines for individuals involved.

Gaming History Timeline

The anthropologic study of play assist with better understanding the role of playing games throughout history. Playing different forms of games have been a part of a unified global tradition. As a brief review, gaming will be examined by identifying different types of games while creating a timeline of its conception and usefulness. Each game type was critically reviewed with the usefulness of Britannica Encyclopedia online.

Dice Games

Dice games are one of the earliest games known to man. The origins of the dice were precursor primitive magical devices known as knuckle bones (anklebones of sheep, buffalo or other animals). The polyhedron Dice is designed with symbols on each side, for common dice, each side would be represented by a dot, with the last side having 6 dots. The dice are usually rolled, flipped, shot or tossed in most games. Dice are generally used to create random numbers used for scoring. There are different forms of multi sided dice, along with multiple ways to create scoring systems. Dice have been used throughout the creation of civilization, including Vikings, Greek, Roman, Egyptians & India. Not until the 16th century did dice games become subjected to mathematical analysis by Italians Girolamo Cardano & Galileo.

Domino Games

Dominos are small, flat and rectangular blocks used as a gaming object. These also can be referred to as “bones” but can also be referred to as “cards” based on its design. Dominos originated in China, but not until the 18th century did western culture record dominos as a game. The game of dice is a positional game where each player takes turns placing each domino edge to edge against each other for specified total (e.g., 4 to 4).

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The game western game is played with two to four players. Dominos are shuffled facedown and played by each player. Players who first empties hand of all his dominos wins the game.

Chess Board Games

There have been numerous board games created throughout civilization. Specifically, in more modern times, Monopoly has been known to be one of the most popular boarded games invented. Chess is also one of the oldest popular board games. Chess dates as far back as the 6th century from India, and by the 10th century it developed presence in Asia, Middle East and Europe. During the 15th century, chess was recognized as the “royal game” because of its popularity. Chess is predominately a strategy game with fixed rules. The board of 64 squares represent a battlefield where each player aims to captures each other’s king. There is an algebraic notation element that can be recorded, which later serve useful for the computer chess game development.

Card Games

Card game origins are thought to be unknown. Origins have most credit to the Chinese from China in a game called “*jezige*”, being played as early as the 800’s. In more modern times, the most popular card decks consist of the French Card Deck consisting of 52 cards, 4 suits (Hearts, Diamonds, Clubs, Spades) and two colors (red and black). This set of game was adopted by countries such as France, the United Kingdom, and the United states. Its popularity can be seen in Casino games such as poker, or blackjack. The most basic reason for its popularity was because its cheap and simple design to print: “52 cards, four familiar suites, two colors, inflexible dimensions” (Nosowitz, 2020). Since its origins, “Cards” have been captivating because its easily recognizable fun.

Electronic Games

Electronic games are the most popular type of game in present society. Electronic games are typically used for general purpose. Playing Electronic games consist on a “machine” or on a “platform”. The machine or hardware describes the physical device being used. Platform refers to either device or type of game being played. Playing electronic games on a machine or on a “platform” include a variety of simultaneous play (player vs. player, player vs. computer, arcade mode, home console, handhelds and mobile devices.). The concept of the type of game playing has its origins in chess. As early as the 1950’s, notable mathematician and engineer Claude Shannon, conducted decades of research on computer programable chess programs. the evolution of Electronic games continues with a variety of developed game concepts.

Present State of Gaming

In more modern times, the persuasiveness of online gaming culture raises the question if it is important to explore and archive the evolution of videogames along with traditional games. A plethora of video game history has been entangled into media studies or software design, Henry Lowood and Raiford Guins attempts to “Debug” the lexicon and social context of videogame culture, by closer examining the academic aspects of game culture. The debugging process can be understood as a collection of essays that jump-starts the critical historical study of games (Guins&Lowood, 2016). Guins states “The important point is that the poorly developed state of game history has become a drag on rather than a driver in the field of game studies as a whole, particularly with respect to humanistic or critical methods of inquiry” (Guins&Lowood, 2016. Pg.XV). Furthermore, within the context of gaming in the present time, Gaming culture has completed and is continually growing a full lexicon of working words and communicative symbols that are exclusively understood by user/gamers.

The history of electronic games dates back to as early as the 1940’s and 1950’s. In 1972 Ralph Baer developed a sophisticated multiplayer, multiprogram, video game system called the Magnavox Odyssey, also known as the “Brown Box” (Onion et al., 2017). This occurrence lead for many game consoles and game titles to be released shortly after.

Popular Game Titles from the 1970 – 1980’s

The Video games review was conducted from History.com. the review consists of popular game titles from the 1970 through the early 1980’s (Onion et al., 2017) games including:

- Space invaders arcade game (1978)
- Microsoft flight simulator (1979)
- Japan develops Pac-Man (1980)
- Nintendo introduces Donkey Kong (1981)

Amusement Arcade style Game

During the early 1980's, America was in the midst of a global technological change. The trend of Arcades (The Golden Age) or arcade style game play was a popular activity among the youth and adults. Webster dictionary defines video game amusement arcade as: "an amusement center having coin-operated games" (Webster, n.d.). During this time period, Arcades were a very lucrative business that generated a rapid economy. Its successful years came to an end as the rise of personal computers and home video game consoles raised in popularity. The trend of amusement arcades is not as popular, but they are not forgotten.

E-sports is among the more popular ways of gaming today. Borowy and Young examines E-sports based on *The Experience Economy and the Marketing of Early 1980s Arcade Gaming Contest*. Their research set out to historicize the development of E-sports (organized digital gaming) in the early 1980s. Three conceptual frameworks were identified; "e-sport as an accompaniment of the broader embryonic gamer culture, a hallmark of the "experience economy" concept, and as a succession of consumer practices whose development was coterminous with the rise of event marketing as a leading promotional business strategy" (Borowy & Jin, 201, pg.1). Borowy and Young notes the 1984 Los Angeles profit making Olympic games were an essential help to understanding spectator sports and mass audiences for sporting events. When the Olympic organizers hired a creative director from "Hollywood", the spectacle of the pre-game production led to a more developed understanding of an ever-expanding capitalistic marketplace and the consumers involvement (Borowy & Jin). Arcade e-sports meets the criteria of sport and media amalgamation, due to the distinguishment between characteristic of e-sport games when compared to other media such as television. Arcade e-sports produces an environment where the participant can be involved and manipulate content.

Platforms on Modern Gaming

The rise in gaming has led the video game industry to produce games that can primarily be played on four kinds of gaming devices. Gaming device can either be played individually or on a network system that allows for multiplayer interaction. Since the inception of video games, video game platforms have evolved into full virtual console submersion, to on-the-go cell phone gaming. To better understand the gaming experience, the 3 different consoles/devices were retrieved from web-based search inquiries (*A Guide to the Different Types of Video Game Platforms* 2019) (Anderson & Jiang, *Teens, Social Media & Technology* 2018) with the intention of better understand the popularity of electronic gaming. The consoles/devices listed are as followed:

- **PC Computer**
The PC computer is one of the oldest and best way to experience video games. PC game play is mainly operated with a keyboard and a mouse. The PC allows for high quality visuals and in-depth game and character customization.
Example consoles: *PC & Mac computer.*
- **Game Consoles**
The video game console is one of the most popular gaming devices used by teens. In 2018, the Pew Research Center identified 84% of teens have access to a gaming console (Anderson & Jiang, *Teens, Social Media & Technology* 2018). The gaming device is primarily connected to a television while the individual/players use a physical gaming controller to operate game character and adjust video game customization.
Example consoles: *PlayStation, Xbox, & Nintendo Switch.*
- **Smart Phone**
The "smart phone" serves as a device to play applications from a network provider application store. Presently, playing application games have dominated the market for interactive games. Games are primarily played with less finger dexterity compared to physical controllers, while adjusting to more finger swiping for functional playability.
Example Device: *Android or iPhone.*

Gaming & Tourism Exploratory Study.

With the widespread use of video games and gaming culture, it is important to understand the adaptability gaming has had over its lifespan, and its opportunity to present new forms of educational enrichment. The specific functions of modern cell phone games include a GPS based location attributes. This component allows for individuals to have access to information within their immediate surroundings. With the use of location-based identification, there is growing need for terms to be added to virtual tourism. In the article "A Location-Based Serious Game to Learn About the Culture" research was conducted from the *Italian National Research Council* indicating the relevance of location-based games and lifelong learning through mobile gaming. The game design was based on a traditional "treasure hunt", with the use of handsets (smart phones) as travel guides and game console. The article promotes a location-based taxonomy in 3 classifications/categories.

Location-Based Game Taxonomy

- **Level 1: Spatial Awareness Games**

“In this kind of game, developers create a virtual representation of the real world with reproductions of building, monuments and landscapes”(Guardia et al., 2012).

- **Level 2: Location Awareness Games**

“Games that exploit information about the user’s localization and his distance”(Guardia et al., 2012).

- **Level 3: Mobile Games**

“Games that exploit the proximity information of two or more users”(Guardia et al., 2012).

Classifications were based on different types of serious games. The research found a lack of significant educational outcomes for users, but also indicated “the potential of social networks in the construction of knowledge and suggests that the social aspect plays a central role in an individual’s cognitive development and training”(Guardia et al., 2012, pg.3). The location-based taxonomy assists in understanding the educational components of location-based interaction. The game design was of 11 mini games to improve students’ knowledge of the city of Matera. The skills stimulated for improvement are memorization, problem solving, eye-hand coordination through mini game contents education (Guardia et al., 2012). Though there is no hierarchal component to the taxonomy, a more classified interpretation is needed to better define the outcomes of the location-based gaming taxonomy and its educational outcomes. The Bloom hierarchy taxonomy provides an assessment (simple to more complex)of educational value and systematic learning. The six levels of taxonomy include knowledge, comprehension, application, analysis, synthesis, and evaluation.The blooms cognitive domain is prominently concerned with the learning skills related to mental processing. The learning process in blooms hierarchy of skills involve “processing information, constructing understanding applying knowledge, solving problems and conducting research” (Hoque, 2016. Pg. 3).

The location-based taxonomy has an educational outcome causal relation with Blooms functioning categories. The location-basedtaxonomy has been redefined to fit a more functional meaning for a gaming applications construct. Definitions have been formatted to meet the popular trend of phone application gaming (see figure 1).

Location Based Taxonomy Redefined.

Level 1:InformationOutcome (*Knowledge & Comprehension*)

The informational context acts an engagement tool and includes intrinsic and extrinsic cognitive incentives.Topics include event apps and developing a social group itinerary.

A:Information.

B:Involvement.

Level 2:Intensity &Commitment Outcome(*Application & Analysis*)

The term further describes experiential learning through incentive. The commitment is based on intrinsic and extrinsic values. Topics include competition& problem solving. Commitment is determined by the degree of the induvial to increase or decrease the motivation in order to continue. The connectivenessincrease in-depth.

A: Low intensity, low outcome.

B1: Low intensity, high outcome.

B2: High intensity, low outcome.

C: High intensity, high outcome.

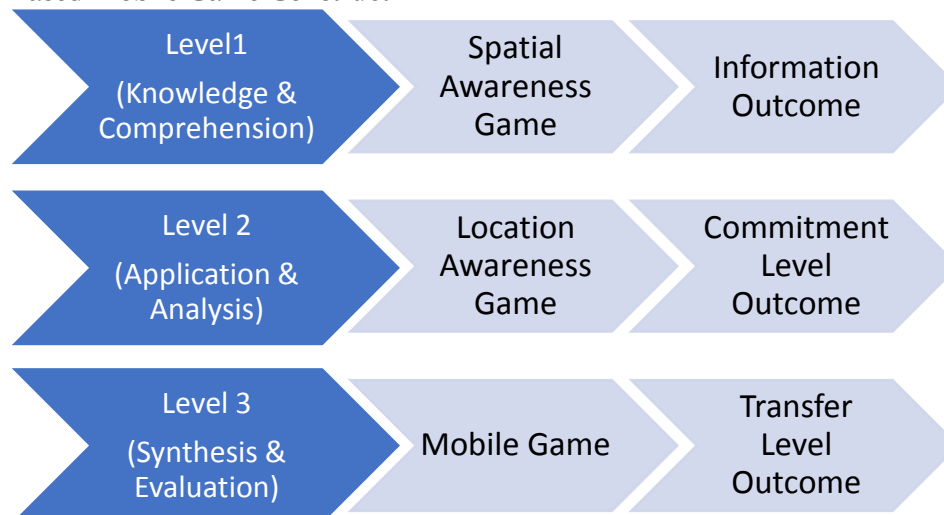
Level 3 Transfer/ Level of Outcomes(*Synthesis & Evaluation*)

Outcomes are based on social behavioral change and creating depth in experience. The level of outcomehas an evolutionary transferability. Skill sets that transfer are related to the enriching or decreasing the amount of experiential learning.

A: Skill set transfer.

B: Transfer level sustained.

Location Based Mobile Game Construct



Identifying Incentives

A critical look at incentives was needed to better understand the value of perceived levels of involvement needed for each level of outcomes. Incentives are a major function for reward-based learning. Contrary to popular opinion on the use of video games as an obstructive learning tool, simplified gaming offers the individual the ability to adjust to the level of intensity and choose the level of commitment. The developed social skills needed to interact in social play are identified as *incentives* for successful social interaction. In a research summary on “Play and Learning”, Dr. Rachel E. White from the Minnesota Children museum notes the importance of mature social capacities with children’s interactive play and peers. The research identified the different levels of social play: 1. Solitary Play, 2. Parallel Play, 3. Associative play, 4. Cooperative Play (White, 2012, p.10). The research found that solitary play implied a description for immaturity for older adults and solitary play.

Incentives on location based mobile games can range from intrinsic to extrinsic rewards. Both intrinsic and extrinsic incentives can be applied to the social connection between play and mental processing (thinking). To add clarity on intrinsic and extrinsic rewards, the value of “play” was identified through Dr. Stuart Brown in his research on the science of play. Brown defends the benefits of play range from increased memory & lifetime learning. Brown identifies the impacts of play deprivation as negatively impacting an individual’s socialization skills and patterns linked to anti-social and criminal activity. Dr. Brown suggest that “play patterns” offer an insight into a healthy behavioral pattern that can enhance the engagement in an individual’s life with intrinsic and extrinsic rewards such as: “trust, empathy, sharing, cooperation, personal resiliency, self-regulation, sustained optimism, and more, despite real world challenges that suppress limit its presence” (Brown, *Consequences of Play Deprivation*).

The social incentives of play were reviewed and identified from a social play working definition from Hugh’s Taxonomy of play type in “Digital Play a New Classification”. Social play is defined as “play in a digital context during which rules for social interaction are constructed and employed” (Marsh et al., 2020). An interpretation of the social skill connected to play was needed and reviewed through a practical online guide designed for enriched learning for children though play. The itemized list further explains the intrinsic and extrinsic value placed on incentives and the encouragement of “play” as an educational outcome. Incentives include: “listening and following directions, taking turns, making decisions, working together, flexible thinking, understanding someone’s perspective, problem solving, executive functioning, communication skills” (Halloran, 2021).

Conceptual Framework Gamification in Tourism.

Gamification has not been widely used in the tourism industry. Different segments of the video game industry have approached this topic in a variety of ways, depending upon how they have used technology. Some segments are very technologically savvy and have used this platform to improve operations. The primary focus of technology has been to improve efficiency and effectiveness of its operations. Most operations have dashboards/interfaces that manage information from a management perspective.

One of the uses of technology that has had little attention has been improving the quality of the client’s experience. This does not suggest that there have not been extensive efforts, but it has not achieved its potential as the use of technology in “management”. One of the areas that has used technology has been NASCAR.

NASCAR has used a social media platform to collect information and to bring their fans closer to the athletes, with the objective to provide an expanded the experience. As a result of the pandemic, they created an *iRacing* experience with athletes, which helped to provide an enhanced experience for the fans and kept the

driver's mentally sharp. This also continued the NASCAR racing because these races were televised, and their products were in front of the public's (*eNASCAR Official Home: News: Schedule: Standings Esports League*). Since they have started their races again, they have instituted an easy game experience with *iRacing* that is a follow-up to their pandemic experiences. This is direct example of how gaming can expand experiences. The one possible aspect of gaming is the enhancing the experience before, during, and after the initial experience. This creates all types of bonding and attachments for the clients. There are not many other examples of how technology platforms and games have been used in tourism. What is needed is a framework to help understand gaming and how it can be used in tourism.

Example: Gaming Application Conceptual framework

Level 1: Information/Context of Information (Engagement Tool).

A:Information.

B:Involvement.

Level 2: Intensity or Commitment (Outcome).

A: Low intensity, low outcome.

B1: Low intensity, high outcome.

B2: High intensity, low outcome.

C: High intensity, high outcome.

Level 3: Transfer/Level of Outcomes (Transferability)

A: Skill set transfer.

B: Transfer level sustained.

Outcome/Prescription:

There are 3 levels with many sub levels that can help classify gaming as it relates to tourism. This is an initial effort to develop a system to help understand gaming and to have a hierarchy that shows the relationship between games and other aspects of an individual's life. This is an exploratory effort and will have to be modified based upon the practical experience in helping to enhance the gaming experience of participants.

The first level is basically defined as an engagement process. This process establishes an initial contact and the development of potential interest. Much of the primary level of this engagement process is information and frequently represented by event apps and these types of basic technologies. Much of this engagement at this level is a process of incentives that provides extrinsic motivation. The development of incentive programs has to be established at each level because motivation is a critical part of the positive development of each level. This aspect represents the motivational continuum is from extrinsic to intrinsic. Once the motivation engagement has been established and the meaning of the activity in relation to the tourism events, the intrinsic motivation is a self-development process. A second step to the first level is not only information, but the association of the information and the development of an interest in obtaining a more depth understanding of the importance of the information. An example of this type of program is "Walk like an Egyptian" (*Example 2*).

It must be remembered that the first level is the establishment of the foundation for the other levels in the conceptual framework. If the foundation is not well developed, the impact upon the tourism experience is minimal. The second level assumes that there is a level of engagement that has sought some type of information and involvement. This level is based upon intensity/commitment and outcomes. Different steps can be developed based upon the types of outcomes and the achievement of the level of outcome.

There must also be an assessment of the level of commitment along with the assessment of the achievement level. It is obvious that the individuals with higher levels of achievement and commitment are the individuals who are competitive and have the highest level of achievement. This does not mean that their satisfaction level is the highest. It is in the analysis of comparison of the levels of commitment with outcome levels that understanding can be achieved, and prescription can be planned to develop a higher level of "satisfaction" and meaning of the experience. This is where emotional attachment is important and intrinsic motivation begins to help drive the experiences.

Examples of analysis and interpretation.

Example 1.

Level 1 (Spatial Awareness game): Harry Potter Chaos at Hogwarts

For a serious game review, Harry Potter Chaos at Hogwarts is a Virtual reality location-based game application designed for interactive play.

A: Game design creates an augmented reality of Harry Potter virtual world.

B: The interactive features of game has the ability to connect an individual player to Harry Potter store “physical” location.

Outcome value: Problem solving, Orienteering. Individual can familiarize themselves with interactive design.

Example 2.

Level 2 (Location Awareness game): Walk like an Egyptian.

For a serious game review, “Walk like an Egyptian” is a location based, mobile game developed for tourist. The game is designed to provide informational assistant for tourist, all the while providing motivational narratives to collect data in the form of photos, comments or reviews to enhancing the quality of exploration.

B1: Information for engagement & intuitive orientation (geo-mapping).

Outcome value: Companies can add additional information, introduction of things (product placement).

The third level focus is on the transfer of the outcome from the game to life. The primary emphasis of this is an assessment of the percentage of outcomes transfer and the impact upon the gamer’s life. This transfer will be upon tourism and how tourism impacts the individuals’ life. Obviously, the analysis and prescription from level II will influence the transfer and what percentage is transferred. It is important to understand the dynamics of how this transfer occurs. This type of information will be part of the feedback loop that will help provide additional prescription for the individual to increase the amount of transferability. The 2 key issues are what activities are needed to increase the amount of transfer, and what support is needed to sustain the transfer. The activities must be consistent and be integrated into the activities of level I and level II. Another element that must be applied creatively is incentives to move the individual from one level to another. One of the primary problems is that the individual gets comfortable at a level of performance and does not want to change. The incentives are the elements that help the individual progress through the integrated system of change. There is very little understood about the transfer process, especially as it may involve leadership in the tourism movement. The primary question may be how these experiences have changed the life of the individual from the point of view of their perspective in relation to lifestyle and culture. Many times, the memories from these leisure experiences last a lifetime and influence change in the immediate and long-term spans of one’s life.

Example 3.

Level 2 (Location Awareness game): ZOOM Jeopardy/trivia

For as serious game review, ZOOM Jeopardy is a location-based game developed for team building. Locations are remotely connected through Computers and smartphones. ZOOM Jeopardy promotes inclusion with organization and staff. Individuals are provided with the choice of participation and is offered the benefit of incentivized learning.

B1: Zoom Jeopardy, teaches team building, can also help in developing in transferring leadership skills. Zoom Jeopardy team building can assist with developing transition for leadership programming.

Prescription outcome value: Team building & leadership trait development. Participant moderates and evaluates progress of team involvement. The individual can become more aware of work performance and group participation. Increased incentive will increase participation and promotion with game use.

Examples 4.

Level 3 (Mobile game): Zwift Bike program.

For a serious game review Zwift Bike program (online biking application) is a location-based game developed for improved home physical health.

A: Individuals are able to do more things, increase self-confidence, achieve competitive advantage, engage in competition.

B: Continued participation may result in connecting more with recreational and fitness programs and activities.

Prescription outcome value: Client continuing use of exercise video game products such as Nintendo Wii Fit, Dance-Dance Revolution. Participant may seek to gamify alternate health programs to apply for healthier lifestyle.

The applications have the ability to decrease an individual’s obesity concern and assist with long terms goals for health-related illness associated with low fitness levels. Companies can increase transferability with continued and more experienced exercise programs.

It is obvious from the conceptual framework that those that plan tourism experiences are not going to achieve the 3 levels, except in very few instances. The conceptual framework is a tool to help in thinking through gaming and how tourism experiences can be enriched. Again, it must be recognized that the conceptual

framework is based upon a hierarchy. The only way to make any sense of this hierarchy is the application and modification based upon clinical results.

Conclusion

The history of play has been a part of global tradition since its archeological origins. There are aspects of gaming that are far reaching, for example, gaming consoles are seen as children's toys with advance technology in society. The writings in this paper illustrate a brief history on gaming as it relates to play, and the interconnectedness of modernized gaming (ex. *cellphone, tablets consoles and PC-computers*), and the relationship of "play" as constructive behavior. The culture of gaming has extended its self-past game consoles or arcade-style gaming. Gaming has become ever present in our daily lives through the use of the "Smart-Phone" and gaming applications. There is a critical connection between electronic gaming and tourism, specifically with the use of location-based gaming. The results of the research detail a relationship between educational outcomes and the use of location-based gaming in tourism. The conceptual framework further details a classification of mobile application games based upon incentives and motivational outcomes. Furthermore, the research needs further investigation on the developmental conceptual framework for future gaming applications and the safety implications of social interaction on location-based gaming. Lastly the research attempts to define a location-based taxonomy as a game application classification hierarchy, as well as develop a gaming explorative tool for its use in virtual tourism.

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