# “To Get Help, Please Press X” The Rise of the Assistance Paradigm in Video Game Design

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## ABSTRACT

The first generation of video games are known to be tremendously challenging. On top of the classic “easy to learn, hard to master” arcade games, the development of the domestic market saw the rise of more expansive and varied game worlds, in computer RPGs or adventure games. This added complexity is often synonym with a more steep difficulty curve due to the amount of information to assimilate early on. In this paper, we will try to understand how game designers have organised the challenge and complexity of their games through the development of assistance systems: tutorials, check points, adjustable difficulty, etc. The historical evolution of these systems supposes a major change in the way players are addressed by the medium, from the highly competitive environment of early days to the seemingly more cooperative attitude of contemporary games.

### Keywords

history of video games, assistance, tutorial, difficulty

## INTRODUCTION

As Henry Lowood pointed out in his recent contribution on the history of early arcade machines (2009), the phenomenal success of *PONG* (Atari, 1972) can be attributed in great part to the simplicity of the simulated events and of the operational rules, summed up by the famous directive: « avoid missing ball for high-score ». By contrast, the lukewarm reception of *Computer Space* (Nutting Associates, 1971) is largely attributed to its complexity for the time. As video games evolved, in arcade parlours as well as in the domestic space with home consoles and personal computers, game designers have longed to create more complex experiences without alienating potential players. Salen, Zimmerman (2003) as well as Juul (2005) have noted that video games – in comparison with their non digital equivalents – open up new gaming possibilities, since the computer can uphold more complex ludic systems than the shared mental effort of human players typically could.

From the classic “easy to learn, hard to master” arcade hits to the expansive worlds and systems of the D&D-inspired role-playing games running on the first home computers, the early generations of games are known for the incredible challenge they proposed to players. At the same time, many of the design features that we take for granted today – tutorial levels and intermissions, save state systems, adjustment of the difficulty setting, hint / help systems, etc. – were introduced quite a long time ago in the history of the medium. In this short paper, we will expose the various ways in which game designers have tried to integrate new layers of complexity in their games in a

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pleasurable way. One basic hypothesis will guide this overview: every step towards a more complex video game experience entails some complimentary form of assistance. To put it in other words: in the context of a ludic and gratifying activity, the variations of the immersive experience through the integration of depth to the simulation or improvements to the interactive and audiovisual aspects are paralleled by the introduction of systems that deliberately assist the performance in a way that is far removed from the anthropomorphic strategies of representation associated with the ideal of immediacy. On top of interactive mechanisms and tridimensional audiovisual feedback, these systems have become an integral part of the mediation of experience proposed by video games; they are at the core of a blatantly mediated experience – hypermediatic, to use the expression coined by Bolter and Grusin (1999) – while being essential to the interactive immersion in a richly mimetic game worlds.

On top of an inherent pressure from game design, we will try to shed light on the contextual factors that also favored or hindered the development of each major assistance function. Five elements will be reviewed: tutorials, hint systems, spatio-narrative guidance, variable difficulty and save systems. For this short paper, we have decided to focus mostly on the first generations of arcade games and home systems, and to point out obvious connections with contemporary game design. This overview will be sufficient to highlight the tremendous evolution in the assistance provided to players. Since the topic encompasses the entirety of video game history, this paper leaves significant dark areas to be illuminated by further research.

## TUTORIALS

As Salen & Zimmerman have pointed out (2003), one of the advantages of video games over their tabletop cousins lies in their procedural nature, which allows the player to learn the rules as the system operates. However, the clarity of rules is one of the essential features of games (see Juul, 2005), and early video games did indeed provide basic instructions to help players jump into the experience. Early arcade games are well-known for their deceptive simplicity; the potentially ironic fourth instruction on the *Donkey Kong* cabinet – "jump button makes jumpman jump" – is really misleading about the frustrating nature of the experience the player is about to embark on. Newer mechanics introduced by games were prominently displayed on the arcade cabinets, seeking to attract players while teaching them at the same time. The *Galaga* cabinet (Namco, 1981) used a combination of written instructions and color images to detail the introduction in the shoot'em up genre of the "ship recovery" mechanic. Similarly, *Zaxxon* (Sega, 1982) featured bright color images around the joystick to illustrate the altitude variation system and a new deadly possibility: "avoid crashing into the walls and electronic barriers". Information redundancy between the printed instructions and the attract mode of the game was also a common tutoring strategy. In *Berzerk* (Stern Electronics, 1980) for instance, the events of the short on-screen demonstration echoed the written instructions: the protagonist moves and shoots in many directions, escapes the first room, and tries to destroy EVIL OTTO in vain. Similarly, *Zaxxon*'s attract mode highlighted the likeliness of crashing if players didn't pay close attention to their altitude.

By contrast with the "easy to learn, hard to master" arcade model, early role-playing games published on home computers were sold with the promise of an expansive and varied world to explore. Building on the *Dungeons and Dragons* rule books, these games included voluminous instruction manuals, densely packed with important information to complete the quest. *Temple of Apshai* (1979) featured more than 200 rooms, 20 different monsters and 80 types of treasures, all of which are painstakingly

described in the 54 pages booklet. In SSI's *Phantasie* (1985), players could create a character by making selections out of six races and six professions, thus affecting their rating in five attributes such as strength, charisma and dexterity; they performed a variety of tasks in many different locales – such as banks, armouries and inns – and could face 80 types of monsters with 100 weapons and over 50 spells. New entries in the genre competed by increasing these numbers. In doing so, they were mostly catering to players already acquainted with tabletop role-playing games; the difficulty curve for early RPGs was quite steep due to the amount of information to assimilate early on, and the openness of the game world meant that players were more likely to face challenges they couldn't overcome.

In 1985, *Gauntlet* (Atari) took up the challenge of bringing the dungeon crawler experience to the masses in the arcades. In order to integrate some of the complexity seen in the home RPGs, the designers created an elaborate interactive tutorial that spans many levels. Every time a new element is encountered, the game freezes to provide textual instructions that are also spoken by a synthetic voice: in level one, players learn that a treasure is worth 100 points; in level two they are instructed to "save potions for later use", and when they face the grunts on level four for the first time, text and voice state that "player loses 4 health. Shoot or fight grunts". Save for the synthetic voice, *I, Robot* (Atari, 1983) already used similar interactive tutoring strategies in 1983. In *Thunder Blade* (Sega, 1987), stage one was clearly identified as a "flight training" mission; 30 seconds were afforded to players to get acquainted with the control of the ship.

Interactive tutorials represent a major development in the rise of the assistance paradigm. But the overt address to the player and designation of early levels as training grounds are not the most significant aspects here. *Gauntlet* carefully orchestrated the order in which players would encounter new objects or enemies, and this careful pacing is what defines tutorial sections in essence. As such, earlier games already provided interactive tutorials implicitly. The manual for *Star Warrior* (Automated Simulations, 1980) pointed out that the first level is ideal for learning the game. Easier early levels specifically designed to facilitate the assimilation of basic mechanics have rapidly become the norm in video game design.

## HINTS

The first iteration of hints in the video game experience was clearly an extension of the tutoring aspect. The main incentive to provide additional tips and strategies was the introduction of new mechanics and objects; the overall challenge was increased by the newfound complexity and balanced by giving additional information from the get go. Many hints pertained to the possibility of maximizing one's score, but could also provide valuable gameplay strategies. The *Battlezone* (Atari, 1980) cabinet recommended to "use the radar; keep moving; use the cubes and pyramids as shields; listen for the enemy's tank shots", while *Tempest* (Atari, 1980) players received hints such as "Hold the fire button down for continuous fire" and "Use the 'SUPERZAPPER' to zap all enemies on the tube". The manuals or leaflets that came with the home conversions of popular arcade titles usually proposed additional tips and strategies. Whereas *Joust*'s instructions in the arcades cryptically mentioned "Beware of 'undefeatable?' pterodactyl » (Williams Electronics, 1982), the leaflet for the Atari VCS port (1983) stated that « The pterodactyl will try to eat you, but if you hit it directly on its beak you'll destroy it and earn bonus points ». It also featured a hint section listing the best gameplay strategies. The complexity associated with computer RPGs also prompted game designers to provide additional guidance in the form of hints. Throughout its 30 pages, the manual for SSI's

*Phantasie* (1985) is scattered with "playing hints" under appropriate sections. Getting assistance beyond those hints often implied additional expenses: developers offered a variety of services, from help lines to official hint books.

The creation of hint systems built into the software itself to assist players represents a major development. From the early 1980s up to the mid 1990s, adventure games enjoyed mass popularity in spite of their challenge; the open-ended nature of the exploration and of the interactions that the users could try to carry out with the environment, in conjunction with the sometimes whimsical solutions to the puzzles, often stopped the flow of progression The box for Mike Edwards' *Realm of Impossibility* (1983) highlighted its "on-line" help screens that the player could call up by pressing the space bar. Many of Scott Adams' games in the *Adventure* (1978-1984) series invited users to type "HELP" on the text parser in the hope of receiving some assistance. In 1986, the box for Pryority Software's *Gateway* proudly stated: "no extra expense for hint book!"; players were able to access hints at any time through the mouse-driven interface. Hint systems have become more common throughout the 1990s. The necessity to expand the player base to make up for the rise of production costs might have been an incentive to integrate the feature in major titles like *Under a Killing Moon* (Access Software, 1993) and *Roberta William's Phantasmagoria* (Sierra On-Line, 1995). Although some restrictions applied, gamers were able to get hints about a specific situation when they got stuck. Contemporary games such as *Infamous* (2009) and *Batman: Arkham Asylum* (2009) automatically provide textual hints when players face certain new challenges. This assistance often takes the shape of a reminder of a tutorial element: in *Crysis 2* (2011), for instance, the player is instructed to "press Q to activate armor mode" before jumping down from high ground.

## SPATIO-NARRATIVE GUIDANCE

Classic arcade games typically organized the game world in clear-cut segments to be visited in a specific order: waves, levels, stages, etc. In *Gran Trak 10* (Atari, 1974), *Space Invaders* (Taito, 1978) or *Crystal Castles* (Atari, 1983), each segment is seen in its entirety on the screen. The introduction of worlds that expanded in many directions beyond the limits of the screen was a major development for game design, and proposed a new challenge to players. In *Temple of Apshai* and other early RPGs, mapping the dungeons became part of the optimal strategy to complete the game. In fact, many games of the era peremptorily instructed players to draw a map. Game developers started to provide assistance for this task by including map pages in manuals (*Alternate Reality: The City*, 1986), or even large maps with pre-identified labels (*The Legend of Blacksilver*, Quest Software, 1988), to be completed by players. In 1986, Sierra's *King Quest 3: To Heir Is Human* featured a "magic map"; the landscape appeared on a separate screen, paralleling the player's exploration. Westwood Associates have integrated auto-mapping since its 1988's sci-fi RPG *Mars Saga*; the screen was divided to integrate the overhead synthetic map view. The feature became customary in other major series – such as *Might & Magic* (New World Computing) and *The Bard's Tale* (Electronic Arts) around the same time.

Needless to say, asking potential players to draw a map as they performed in the arcade would not have been a very good business decision. The expansion of game worlds was quickly supplemented by the integration of on-screen spatio-narrative guidance systems. With these dynamic displays, game developers went beyond the logic of highlighting elements already encountered by the player on the main experience window, as in the case of auto-mapping; the screen was divided, with another depiction

of the world providing additional information. In *Battlezone* (Atari, 1980), the player had access to a simple radar screen on top of the main display, where dots indicated the position of nearby enemies. The scanner in *Defender* showed the totality of the level, along with the evolving location of both enemy alien saucers and humans that the player must protect from abduction. *Kapstone Kapers* (Activision, 1983) used a similar system, but the presence of the "radar" was not justified by the vehicular / sci-fi setting. *Safecracker* (Imagic, 1983) made good use of the controller plastic overlays bundled with Atari 5200 games to direct players. As one drove in the open world presented in isometric perspective, the border of the screen changed colors; each of the four colors referred to a corner of the controller overlay, thus indicating the general direction of the next safe to crack. In *The Legend of Zelda: A Link to the Past* (Nintendo, 1991), players has access to an overview map, on which icons highlighted the current position of Link and the location of the next important items to be collected. Many contemporary games, especially those of an open-ended nature like the recent iterations of the *Grand Theft Auto* series (Rockstar North, 2001-2009), make use of dynamic map overlays that constantly keep the player updated about the goals to be pursued in order to drive the narrative forward.

On top of the these elements, it is essential to note that the spatio-narrative guidance system also encompasses many other visual signs overlaid directly on top of the main depiction of the virtual world. Early games were mostly concerned about depicting the objects essential to the gameplay, and in doing so, already presented their worlds in a highly functional and idealized way. The development of evermore photorealistic visuals – both in the 2-D and 3-D eras – is largely responsible for the development of directional arrows and highlighters that assist players in deciphering the lush virtual spaces they immerse themselves in.

## VARIABLE DIFFICULTY

In the home market, users could rely on the challenge rating that many companies provided for their products to decide which game to buy and play: Epyx games were rated according to three icons (action, strategy and learning). Each game box featured a combination of these icons – for instance, "strategy / strategy" for *Temple of Apshai* – in an attempt to communicate the nature of the challenges set forth by the games. Similarly, the side of the boxes for SSI games always specified the difficulty level (intermediate, advanced) and the estimated play times. In the arcades, owners could not only modify the cost of play through physical DIP switches on the board, but these switches also controlled other aspects relevant to the difficulty of the game or the number of lives allocated per quarter. Variable difficulty settings to be selected by the user were introduced at the beginning of the 1980s; in *Tempest* or *Star Wars* (Atari, 1983) for instance, players could select to start at easier waves if they were willing to sacrifice a generous score bonus.

Considering the ever-present concern of play time vs. profitability in the arcades, adjustable difficulty made more sense for domestic systems. Home conversions of classic arcade games such as *Joust* or *Berzerk* often added different skill levels to choose from. On the Atari VCS, one can find switches labeled "game select" and "difficulty". In the VCS version of *Space Invaders* (1980), these switches allowed players to adjust the size of the laser cannon – and consequently, the probability of being hit by the invaders' bombs. Some aspects could be modified directly during a game. It was common to organize the challenge in increasingly difficult waves / levels, and games like *Fast Eddie* (Sirius Software, 1982) allowed players to jump directly to more difficult waves by using

the “game select” switch. However, this freedom came at a cost, as these manipulations could reset the scores accumulated up to that point.

Beyond the canonical “easy / medium / difficult” selection, variable difficulty settings have also been used to address the pride of players, and thus acted more like a taunting mechanism. *Wolfenstein 3-D* (Id Software, 1992) proposed five settings, from “Can I play, daddy?” to “I am death incarnate”. But the ego of players could be spared by providing a covert adjustment of difficulty – or dynamic adjustment, as it is called nowadays. In *Astrosmash* (1981), an *Asteroids* clone released on Intellivision, the system lowered the difficulty automatically when players only had one life left. *Left 4 Dead* (Valve, 2008) refined this dynamic adjustment of difficulty with the “AI director” algorithm, which modifies the density and ferociousness of the zombie horde in response to the user’s performance.

## PAUSE FUNCTION AND SAVE SYSTEMS

Like the adjustable difficulty systems, the pause function made more sense in the domestic context. Arcade games were in fact more concerned about players ending their session and make way for the next quarter, hence the presence of timers and other incentives. For the 5200 (1982), Atari decided to integrate a pause button directly on the infamous controller. But many games had implemented the pause function before. In the Atari 400/800 conversion of *Space Invaders*, players could suspend play by pressing the “control” and “one” keys at the same time. On most home computers, the pause function was usually associated with the spacebar or the “p” key. Of course, interactive fictions (*Zork: The Great Underground Empire*, Infocom, 1980; *James Bond 007: A View to a Kill*, Angelsoft, 1985) and turn-based games (*Roadwar 2000*, 1986; *Dragon Warrior*, 1986) integrated pauses inherently in the interactive design.

As we have seen, the domestic market favored the emergence of adventure and role-playing games. Compared to the quick thrills of arcade classics, these genres relied on puzzle-solving and strategic thinking, and orchestrated these challenges over much lengthier play sessions; the lack of a save system would have meant the loss of many hours worth of efforts. In *Snowball* (Level 9 Computing, 1983) and other games in the *Silicon Dreams* interactive fiction trilogy, users who faced death on the colony starship could undo their last command by typing “OOPS” in the text parser. But the long-term implications of players’ decisions in *Ultima* (Richard Garriot, 1981) or the lengthy war games and RPGs of SSI required a more permissive save feature. The writable media – cassettes and floppy disks – used by early home computers allowed designers to implement these systems more easily; it was used as early as 1979 to save the state of war in the turn-based strategy game *Invasion Orion* (Automated Simulations, 1979). The cartridges used for home consoles did eventually integrate battery-powered chips to store games (*The Legend of Zelda*, Nintendo, 1986), and some systems had dedicated volatile memory on board to manage the saves from all games. Other games relied on alphanumeric codes that were provided to players at the end of a session in order to restart at a similar game state (*Metroid*, Nintendo, 1987).

In 1983, the box of *Moon Patrol* for the Atari 5200 highlighted its “unique continue feature”. To prevent the frustration of starting over from the beginning, many arcade games in the 1980s offered the possibility to continue – at the cost of a quarter – from the start of the current section after all lives were lost. This feature was widely implemented during the NES era, and automatic checkpoints became prevalent in many genres. In popular platformers such as *Super Mario World* (Nintendo, 1990) or *Sonic the*

*Hedgehog* (Sega, 1991), players only had to run past some sort of marker to automatically start at that point should they lead Sonic or Mario to their doom. Interestingly enough, many contemporary games seem to rely on automatic checkpoints instead of letting players save whenever they want.

## ADRESSING THE AUDIENCE

As we have seen, most of the help and assistance functions that players enjoy in contemporary games have been introduced quite early in the history of the media. Documenting the rise of the assistance paradigm in game design is but the first step in a study that will undoubtedly confirm what we can intuitively guess by looking at games today: the systematic integration of these design elements have profoundly changed the way the medium addresses potential players.

Early arcade games followed the classic "easy to learn, hard to master" principle to a large extent. Even though these games provided clear tutoring, hints and adjustable difficulty settings in some instances, many of the arcade classics proposed an ever-ascending difficulty curve and no real "winning conditions" outside of getting the highest score on display. The *Donkey Kong* cabinet promised that "when a certain screen has been cleared, jumpman saves the lady". Yet, most players could not get past the third level. Expert players eventually uncovered the blatant deception set forth by the designers and faced the "kill screen"; exceeding values in the level-generating algorithm led to a broken and insurmountable play space. *Space Invaders* and *Pac-Man* (Namco, 1980) are some of the other famous titles of the era that "featured" a kill screen. The notorious difficulty of these titles encouraged a highly competitive environment where the display of proficiency in arcade parlors became an attraction in itself.

Nowadays, players are asked to select a difficulty setting at the beginning of the game depending on their overall proficiency and familiarity with the genre. Most games start with a dynamic tutorial level, where the basic mechanics are presented clearly and new elements are introduced gradually. Good game design is synonym with a challenge that's been carefully balanced to increase as the player gains proficiency in the course of the experience. Mihaly Cskiszentmihalyi's flow theory (1975) – based on the idea of a progressively adequate challenge – seems to have become a gospel of sorts for game designers. Should they find themselves unable to survive at a choke point, players can rest assured that a nearby checkpoint will spare them the frustration of having invested so much effort in vain. They might even start to expect that the game master will dynamically adjust the challenge to their capabilities, and if all else fails, can look in the options menu with the hope of adjusting the difficulty setting during the course of their quest. Where the early game proposed to cheat death at the cost of a quarter, the 21st century experience seems to deny death in another way: by minimizing the occurrence as much as possible.

According to cinema historian Tom Gunning, major historical changes can be determined by the ways in which players are addressed at any giving time during a medium's life (1990). As the industry progresses from this highly competitive model – where technological attractions were presented in the context of an arcade parlor in order to maximize the potential "attraction of the self" – to the domination of home-based entertainment geared towards the gratification of casual gamers, we might have witnessed already a major change in video games' mode of address that is echoed by the evolution of the industry as a whole. It is obvious that video games, while still managing to address players who feed on the thrills of competition, have evolved to become much more

cooperative in leading users towards gratification, be it the pleasure of mastery over a system, or the pleasures of living a journey through a fictional world without the fear of being shut out of the experience for lack of competence.

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