

THE ROLE OF MONEY FOR ATMOSPHERE IN BUS SIMULATION GAMES

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In bus simulation games, players operate buses to transport passengers. Usually, the main focus of these games is driving the vehicle itself – for relaxation, or for matching a schedule. However, in recent releases like “The Bus” and “Bus Simulator 21”, additional tasks are included – such as selling tickets, processing payments, giving change money, and controlling passengers for tickets. Money in such games is depicted as made of certain materials (coins made of metal, bank notes made of paper, debit cards made of plastics, and smartphones made of plastics and glass). This supports a specific atmosphere which can be perceived with the lived body (“Leib”, in the neophenomenological meaning). The goal of this paper is to show how money enhances atmospheric details of the situation, and thereby facilitates the player’s incorporation and playful identification with the role.

Keywords: Money, Simulation, Atmosphere, Lived Body, Felt Body, Neophenomenology



1. Introduction

Public transport simulation games are a sub-genre of both vehicle simulations and career simulations. In bus simulation games, players take on the role of a bus driver. They steer a bus through cities, transport passengers from A to B, try to keep to a tight schedule, but still make the ride comfortable for their passengers. But players do not just drive. They also sell tickets for money, and they control if passengers really have a ticket.

This paper discusses observations about the ticket selling aspect of such games from a mostly neophenomenological point of view (cf. Schmitz 2011, Böhme 1995). This view is interested in the player's subjective perceptions of the gaming situations, especially in the sense of the felt body (lived body; "Leib" in German) in contrast to sensations of the measurable, Cartesian body ("Körper" in German).

This paper discusses money in "The Bus" (TML/Aerosoft, 2021, still early access) and, to a lesser extent, "Bus Simulator 21" (Still Alive Games/Ascaron, 2021). The main focus of these games is driving the bus. "The Bus" offers a large part of the German capital Berlin as playground; the city center of Berlin is modeled very detailed, as are the busses themselves. "Bus Simulator 21" has also busses based on reality, but they are driven in two entirely fictional cities, one supposed to be at the U.S. west coast and one to be in some version of Austria. While "The Bus" offers real-world routes and -schedules, "Bus Simulator 21" allows players to create their own routes and traffic schedules, thereby extending the economic aspect.

2. Money in "Bus Simulator 21" and in "The Bus"

Selling tickets to passengers is a part of both games (fig. 1). When players stop at the bus stop and open the front door, passengers step inside the bus and often ask for a specific ticket (like student ticket or regular ticket) and pay some amount of money. The player selects the correct ticket in the bus on-board computer and prints it. If the passenger pays a too large amount of cash, the player has to give the correct amount of change money by pressing buttons of a coin dispenser.



Figure 1. Simulated passengers in “The Bus” buy tickets from the bus driver (= the player). Players must use the on-board computer to select and print the correct ticket, as well as taking different steps to process the payment.

“Bus Simulator 21” models this process in a simplified and abstract way; ticket types are generic, and money is not visible, even if it is modeled internally. “The Bus”, on the other hand, is quite realistic in this regard – the available ticket types and pricing zones match the city of Berlin; the user interface of the on-board computer resembles its real-world counterpart; the passengers use different means of paying – and if they pay in cash, actual coins and bank notes are visible and must be taken by clicking on each coin and note.

The ticket selling process is, in terms of game mechanics, very trivial. However, it adds to the atmosphere of the games in some ways, and it increases the immersion in the played role of a ‘traditional’ bus driver, who is still responsible for ticket selling at many places. This role play situation uses certain game mechanics, and it also has some narrative aspects (like the narrative of a typical shift in the job as a bus driver, as in “The Bus”, or the narrative of a little bus company which grows over time and must be managed, besides the mere

driving, as in “Bus Simulator 21”¹). As players, we seek both the mechanics and narratives of the “dream job” bus driver, but we may also seek a certain atmosphere which associate with that job.

3. The Neophenomenological Perspective

3.1 Atmosphere

“Atmosphere” is a term that is often used intuitively without any further definition. For example, we can perceive the focused tense atmosphere of an interesting conference session, and the lively relaxed atmosphere of a conference dinner. In the same way, players can also perceive a world in a computer game as atmospheric – maybe as “dense” (without further specification), maybe as “exciting” (like in a sports game), as “frightening” (like in a horror survival game), or as “stressful” (like in a bus simulator where a tight schedule must be kept).

In this paper, the term “atmosphere” is used in a phenomenological perspective, although there are different takes on atmospheres in various varieties of phenomenology. Especially the question if an atmosphere can be made intentionally (created with specific means by designers or artists), or if an atmosphere is ‘just there’ is a point of discussion, because the answer to that question decides if we can talk about atmospheres only in a reception-oriented

¹ In addition to driving busses and handling money during ticket selling, “Bus Simulator 21” includes a (simple) economic simulation. Players need to create routes to connect the various parts of a fictional city, and buy the busses used for serving the routes. Busses currently not driven by the players are driven by NPC drivers. Successful routes with many passengers generate income used for paying the ongoing costs of the bus company, for extending the route network, for buying additional busses, for upgrading bus stops, or for replacing Diesel-powered busses by electric busses. The money paid by the individual passengers to the bus driver is part of that income – the game shows that money is necessary for the simulated bus company to operate. The economic simulation is very forgiving, though. Unlike real-world public transport companies, the bus company in “Bus Simulator 21” usually never struggles financially, and it is next to impossible to go bankrupt.

aesthetics, or if also a production-oriented view (how to 'create' a specific atmosphere as designer) is possible.

According to Gernot Böhme, atmospheres can be created by work on objects (Böhme 1995, 35f). He gives the examples of landscape parks and stage design (ibid.). When this view is taken, it's reasonable to assume that game designers can arrange certain design elements to achieve a certain atmosphere as well, and that emerged atmospheres can be traced back to certain design elements.²

In contrast to a production-oriented view, Hermann Schmitz sees atmospheres as free-floating and not emitted by objects: "An atmosphere [...] is a borderless, indivisible, extended occupation of a surface-less space [own translation]" (Schmitz 2011, 89). From this point of view, it may be questioned whether atmospheres can be created at all, and whether we can identify specific elements in games related to the creation of atmospheres. Schmitz' take is rooted in his very comprehensive works on the felt body, which also offers a specific vocabulary to facilitate speaking about felt body perceptions.

This paper follows a pragmatic approach: The player perception of a game and the felt atmospheres during play can be described with terms suggested by Schmitz (see the next sections³), while at the same time it is reasonable to assume that specific design elements of the game add to the atmosphere perceived by players.

² The field of game studies is studying atmospheres since several years, most notably the works collected in Huberts/Standke (2014) and the work by Jung (2023). A particularly comprehensive example on how to study atmospheres is Felix Zimmermann's work on atmospheres of the past (Zimmermann 2023). Zimmermann develops and presents a method to identify elements in digital games involved in creating atmospheres which are perceived as 'authentic' by players. Such atmospheres can be quite powerful, and this becomes a problem if more specific contents of the game (such as narratives, motifs, or facts) contradict the felt authenticity.

³ For more detailed examples on how to analyze game situations with neophenomenological terminology, cf. Donick/Schwelgengraber 2024 and Donick 2022. Helpful for a broader understanding is also Schwelgengraber (2022), who provides detailed analyses on television and movie perceptions.

3.2 Perceptions of the lived/felt body

The player perspective is strongly related to the concept of “Leib” or, in English, “lived body” or “felt body”, in contrast to the physical, measurable “Körper” or “body”. Böhme (2019) gives the following definition: “body is human nature in external experience; lived body is human nature in self-experience [own translation]” (Böhme 2019, 41). The external experience is related to the scientific view on the body, as in anatomy, physiology and medical sciences (ibid.), whereas self-experience is our own, subjective view on ourselves.

In everyday life, we don’t separate both terms, of course; experiences of both the body and the lived body are related. Also, the “Leib” is not a distinct ‘thing’; the term is more of a shorthand to refer to those perceptions near the region of the body which cannot be clearly assigned to one of physical senses. A simple example for phenomena felt by the “Leib” is our ability to move among a group of people without collision – without the need of constantly looking out for others and without the need for analyzing measurable distances. Schmitz gives a similar example for this “intelligence of the lived body [own translation]” (Schmitz 2021, 87): our immediate ability to intuitively and very quickly evade a danger, such as preventing an imminent car accident (ibid.).

Schmitz provides a vocabulary to facilitate speaking about perceptions of the lived body. Particular importance is given to the terms narrowing and widening, as these are central to the so-called “vital drive [own translation]” (“*vitaler Antrieb*”, Schmitz 2011, 16). Schmitz writes: “Being physical means [...] first and foremost: standing in the middle between narrowness and width and not completely breaking away from either one or the other [own translation]” (Schmitz 1987, 273). In our everyday world we constantly have experiences affecting the vital drive; for example, we may feel tense moments as tightening, and relaxed moments as expanding.

Sensations of narrowness and expansion can also arise when perceiving media, which is something everyone knows who has ever slipped back and forth in their chair while watching an exciting film, tense and contracted, and then sank back and relaxed into their seat when the exciting scene dissolves (cf. Schwelengraber 2022). Gaming situations are even more intense in this regard, because in games players are usually actively engaged with the situations.

3.3 Situations and Constellations

According to Schmitz, a situation comprises of facts, problems and programs (Schmitz 2011, 75). Facts are *what is*, problems are *what is meant to be* (ibid.). Programs are norms, wishes, ideas, etc. that influence how we perceive, judge and deal with the situation with regard to the problem (ibid.). However, situations do not appear step by step, and the three mentioned aspects can not be separated. Situations appear to us suddenly and holistically. Therefore, a situation's 'meanings' cannot be explained in detail (the attempt to identify single elements of a situation would lead to mere constellations of single elements, but still not grasping the essential aspects of the situation); situations are, as Schmitz says, "internally diffuse [own translation]" ("binnendiffus", ibid. 118).

The problem and program terms are therefore a bit different than the everyday use of these words suggests. In everyday life a problem is an undesirable state which has to be transformed into a desired state, whereby a barrier must be overcome during the transformation (cf. Dörner 1984). The steps of such a transformation would usually be viewed as the program: First I do this, then I do that, etc., in order to achieve the desired state.

However, from a neophenomenological point of view, the focus is not on doing something, but on perceiving the situation. That's why the term "problem" (in this perspective) should not be misunderstood as something to be 'solved'. Similarly, the term "program" should not be misunderstood as a step-by-step solution – programs are the norms and desires which are the background for our decisions and acting.

In every-day life, we are constantly reducing the complexity of holistic situations into workable constellations. It's a necessity for survival (Schmitz 2021, 87). Many digital games are designed to provide workable constellations as well. They want us to tackle very specific problems and reward us for being successful. Games use atmospheres as a means of enriching and contextualizing their problem-posing situations. To better understand this, it can be worthwhile to single out elements comprising the situation and analyze them as constellations. Zimmermann (2023) does this in order to learn how historic atmospheres are made by game designers. In a somewhat related manner, in the remainder of this paper I ask how money in bus simulations is related to the atmosphere of the simulated situations.

4. Situation, Material, Atmosphere, and Money in Bus Simulations

4.1 Playing Situation and Played Situation

When playing a bus simulation, we are in a complex situation which consists of both in-game and 'real' aspects. If we tried to split this overall situation into sub-situations, we could come up with (1) our own playing situation as players, and (2) the simulated situation of our played character:

1. The player's playing situation:

- a. Fact: The player plays the simulation game and perceives all its elements together, at once: the movement, the sounds, the other traffic, the signs, the people, the weather, while at the same time being the 'real' world's space with all the other elements of that space to perceive, and all the contexts which influence the playing.
- b. Problem: The player may use the game for several reasons, for example: Relaxing or seeking escapism; exploring a virtual city; remembering the last vacation in the depicted city; achieving a high score (being on time, earning lots of money with the bus company, ...), learning something about the job of a bus driver or the technology; or just creating chaos in the city.
- c. Program: Players play the game based on their own values and goals (which also define the problem), for example as a serious simulator, a driving game for the sake of driving, a tool for learning about the job, a tool for learning traffic rules, etc.

2. The bus driver's simulated situation:

- a. Fact: The bus driver has to follow a schedule and transport passengers in a comfortable way to their destination.
- b. Problem: The bus driver has to navigate the city, not crash, obey traffic rules, care about ticketing, be on time, ...

- c. Program: Is the schedule more important than traffic rules? Are rules more important than the schedule? Is safety more important than the schedule? Or is there an equilibrium between schedule, rules, and safety?

During play (to emphasize this again) we perceive *one* situation with aspects of both, and we perceive it at once and holistically; it is internally diffuse. The attempt to split the situation in a playing situation and a played situation leads can not grasp this situation fully. It leads to a constellation and is an attempt to tackle the whole complex for the purpose of analysis.

When the player is focused on the game, their overall situation is influenced by what is shown on the screen. Due to the player's ability to playful identification ("spielerische Identifizierung", cf. Schmitz 1977, 465), aspects of the presented situation are incorporated in the player's lived body ("Einleibung", cf. Schmitz 2011, 38) and become part of their situation.

The norms, goals and wishes of the programs influence how the problems are tackled – if being on time is a dominant norm in the player's simulated situation (and maybe their real life as well), they may disobey traffic rules (like being faster than allowed or crossing a red traffic light). If safety or passenger comfort is the dominant norm, they may sacrifice punctuality for that. If the player takes the game very seriously and tries to accomplish all goals at once – being on time, no accidents, no rule breaks, fast ticketing – they may feel a form of stress. The game may feel as work – like the job it tries to depict.

In the dynamics of the vital drive, players may feel the stress while processing the tickets as a "narrowness" within their "Leib" (and maybe even their body). This can happen, for example, when the player knows they are already late and each passenger without a ticket delays them further (especially those passengers who dare to pay with lots of small coins or large bank notes which both takes more time to process, in contrast to handing the exact ticket price, cash-less payment methods, or no need for ticket purchase at all).

Contrary, the player may feel a relaxed body tension and an expansion of the lived body when just a few or no passengers buy tickets, because they can save time this way, which makes it easier to adhere to the other norms. The player may also feel an expansion when they can change to a special bus lane or an empty street with only green traffic lights. The empty street functions as a motion

suggestion (“Bewegungssuggestion”), thereby motivating faster, uninterrupted driving. This allows to drive less stressed and to catch up with the schedule.

If the norm “keep the schedule” is not an important part of the player’s problem and program (because the player just enjoys the driving experience), the player may just drive in a relaxed way, safely, within the speed margins, and just be happy with the ticketing process, the sound of the coins, giving change money, the sound of printing the ticket, etc.

4.2 Material and Atmosphere

The ticket selling process is about money and handling money – taking coins and bank notes and giving change money using the coin dispenser or processing wireless payment methods used by the passengers. The modeling of this process is referencing material aspects of the payment methods which we know from the real world. Proverbs like “money doesn’t stink” or “the scent of money” address the material character of money. The proverbs are positive statements about money; they frame money as something desirable, regardless from where it comes from.

Of course, if you ever hold your nose near a stack of old bank notes that have gone through lots and lots of other hands before yours, or if you ever smelled at your hands after you held a bunch of coins, you probably noted that money *can* have a scent and that it is not always positive. The scent is a mixture of the coin’s and bank notes’ own materials (the different kinds of metal, the paper and its structure), and the traces of lots of other people and their environments. Modern payment methods, like debit cards or payment apps on your phone, are different, but also made of a material – plastics and glass, with a certain feel.

For phenomenology, the sensory input of a material is not sufficient to describe how we perceive it. Böhme (1995) points out that feeling a material as having some quality (like its warmth) is neither explained by analyzing it physically, nor by using it as (part of) an object, but by perceiving the material as an atmosphere (Böhme 1995, 54).

According to Böhme, materials emit atmospheres, which we absorb in our perception and feelings. For example, a cheap mobile phone made of plastic emits a different atmosphere than an expensive mobile phone made of metal and glass – and we may associate one with a low-income and the other one with wealth (and we may even buy the expensive one even if we can’t afford it, just

to present ourselves as wealthy). Material and social meaning are connected (ibid., 55f.).

Böhme considers materials a combination of both so-called synesthetic characters and social characters (ibid., 53):

- Synesthetic characters means that two or more qualities are perceived together (ibid., 54). For example, the material of an object can be perceived as having a warm color (or emitting a warm atmosphere), because several qualities are perceived together, such as its color, its shape, or its softness. We could add that also the context in which the perception happens can have an influence – context like our personal disposition for felt body perceptions (“leibliche Disposition”, cf. Schmitz 1987, 274) in a certain situation, as well as other materials with which the item may be arranged.
- Social character refers to the association of a material’s atmosphere with certain ways of life. For example, an expensive golden watch with a leather strap may feel warm due to its colors, and therefore be associated with a wealthy way of life (cf. Böhme 1995, 52).

In digital games, the visuals and sounds of objects are means of transporting material qualities. They transport a specific atmosphere. An expensive leather seat in a business jet is associated with other synesthetic and social characters than a hard passenger seat in a city bus. Simulations of these types of vehicles convey these qualities as atmospheres.⁴

Regarding money in bus simulation games, we can think of the visual and audible qualities of the coins and bank notes passenger use to pay in “The Bus”, and the typical “coin” sound emitted when pressing the coin dispenser to give change money (which sounds a bit like money coming out of a gambling machine). The “cash register” sound in “Bus Simulator 21” is similar; it is played

⁴ In a bus simulator, NPC passengers can support a specific atmosphere as well, for example by clothing styles (cheap looking or expensive looking?), behavior (sitting calmly? Disturbing others with loud music? Specific small talk topics?) or by riding the bus with or without ticket. Thanks to the reviewers for this remark.

when players take the role of a ticket inspector and find passengers without ticket (fig. 2).



Figure 2. Players of “Bus Simulator 2021” can also work as ticket inspectors. When passengers without a ticket are found, a cash register sound is played by the game.

4.3 Payment Types and Materials in “The Bus”

In “Bus Simulator 21”, change money is only audible, but not visible. Payment given by the passengers and change money returned is visually abstracted into a message field shown next to the money dispenser.

In contrast, “The Bus” tries to convey a very haptic feeling of the money (fig. 3).



Figure 3. Paying in “The Bus” is simulated in great detail. Each single coin is clickable, and change money is given by pressing the buttons of the coin dispenser. Cashless payment methods are also being used by the simulated passengers.

Several payment types are depicted in this game – people pay with coins, with bank notes, with debit cards, and with their mobile phones. So, when the virtual people pay, they use payment means of different materials. The synesthetic characters of the materials can be associated with social characters, which can lead to a lot of interpretations:

- **Paying cash with coins:** typical coin sounds; hard, metallic, heavy, warm look (golden color, copper color) or cool look (silver color). Traditionally, lots of coins were associated with wealth (many coins = lots of money), but nowadays, coins may also be associated with either traditional people still sticking to cash (maybe sceptics of newer payment methods) or with people who may not be wealthy enough for payment methods other than coins.
- **Paying cash with bank notes:** soft, warm (paper); similar associations as coins, but possibly wealthier (e.g. using a 20 EUR bank note for paying a 3 EUR bus ticket).
- **Paying with debit card:** hard, warm (plastics); the card shows that the person has a bank account, i.e. the person conforms to certain norms. The person may also prefer efficient payment methods.

- **Paying with mobile phone:** smooth, glassy, both cold (visually) and warm (battery warmth, CPU warmth); similar associations as debit card, but possibly a younger person used to modern internet services and electronic payment options, and wealthy enough both to afford such a device and to be a customer of online payment providers.

The modeling of different payment types supports immersion in the played role (as bus driver). It becomes part of the felt atmosphere of the game, it adds detail to the situation, and thereby facilitates incorporation and playful identification. This, though, is possible also because we know from our everyday lives that public transport services cost money, and how ticket selling situations are typically structured. We can re-live such situations in and with the game.

If a player considers themselves a somewhat grumpy bus driver, they may tell the passenger: “Really, you pay the short trip with a 20 EUR note?”, because they don’t like to press the coin dispenser buttons a lot for giving change money. The player may also ask: “Seriously, you have to pay with so many small coins?”, where they have to pick and possibly count the money, which on the one hand is strangely satisfying (because of the atmosphere that transports the haptics of the virtual money), but on the other hand is wasting time when the player’s main interest is driving, not interacting with passengers, and the player mainly want to keep the schedule.

5. Outlook: Free Bus Rides

Ticket selling and identifying passengers without tickets integrate money into the driving simulation. Besides an enhanced atmosphere, due to a more complex situation, the inclusion of money makes players aware that passengers were not able to drive the bus if they had not any money – which, in the real world, is a big problem for many people, who are sometimes even criminalized.

By default, bus simulators depict this status quo with the inclusion of money related tasks. The implicit resulting message of the game is: “public transport is only for those with money”. This is the norm. When a person pays, they adhere to the norm. If the person pays with a debit card or phone, the person presents themselves as financially solvent, able to use (i.e. to pay for) modern technology. When the person pays with lots of small coins, in a society where cashless payment is the norm, the person sticks out. Therefore, the different means of payment divide people into groups.

The settings of both “The Bus” and “Bus Simulator 21” allow players to adjust the probability of passenger ticket buying, down to 0 if players just want to drive without interruption. This basically means that players can simulate that everybody has already a ticket, or that rides are free.

The immediate effect of moneyless simulation is that everything feels smoother and the whole atmosphere is more relaxed. The stress level is lower, because it’s much easier to keep the schedule. On the level of the lived body, the changes from expansion to narrowing are less hard. It is easier to devote oneself to the movement suggestions induced by the streets and the vehicle. Stopping at bus stops does not interrupt the flow of driving that much. The game loses the infantile “playing with money” aspect (the coins, their sounds), but the rhythm of playing the game – the vital drive we can perceive as narrowing and expanding in the phenomenological sense – is much smoother.

I can only imagine, without any proof or study, that a similar positive effect could occur if free public transport would become the norm in the real world. Bus simulation games may be a way to estimate possible effects.

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