

Life of Galileo*, by Bertolt Brecht: the Scientific Field of an Era and the Role of the Intellectual in Times of Crisis

[*English Version*]

Vida de Galileo, de Bertolt Brecht: el campo científico de una época y el papel del intelectual en tiempos de crisis

Vida de Galileu, de Bertolt Brecht: o campo científico de uma época e o papel do intelectual em tempos de crise

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Abstract

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Objective: based on the text *Life of Galileo*, by Bertolt Brecht, and the theory of the social fields of Pierre Bourdieu, the article sets out to demonstrate the dialogue between the work and the taking of positions –politically and aesthetically– by Brecht in relation to the role of the intellectual in times of crisis, as well as a reflection on the retraction of the hero, from the perspective of historical need and the social conditions of production and reception of the work. **Methodology:** the study uses the methodology of Pierre Bourdieu's social analysis and notions such as social space, social fields, autonomy, heteronomy and

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habitus, to establish both the relations between the scientific, economic, and power fields in the work and the dialogue with the taking of the Brechtian position in the middle of the 20th century. **Results:** Pierre Bourdieu's social analysis reveals the complex network of tensions, networks and temporalities on which *Life of Galileo* is built and enables the opening of dialogue between the networks of relationships and the social structures that are configured between fictional discourse and the conditions of production and reception of the work. **Conclusions:** it realizes the relevance of social analysis as a method that, with emphasis on practical experience, departs from the essentialist vision of literary work; the potentialities of the analysis are presented in the relationship of the two moments of the analysis: on the one hand, within the framework of *Life of Galileo*; on the other hand, in taking the author's position against the influence of totalitarianism in the mid-20th century.

Keywords: Pierre Bourdieu; Social fields; Literary field; Bertolt Brecht; Life of Galileo.

Resumen

Objetivo: con base en el texto *Vida de Galileo*, de Bertolt Brecht, y a partir de la teoría de los campos sociales de Pierre Bourdieu, el artículo se propone evidenciar el diálogo entre la obra y la toma de posición –política y estética– de Brecht en relación con el papel del intelectual en tiempos de crisis, así como una reflexión en torno a la retractación del héroe, desde la perspectiva de la necesidad histórica y de las condiciones sociales de producción y de recepción de la obra. **Metodología:** el estudio se vale de la metodología del análisis social de Pierre Bourdieu y de nociones como espacio social, campos sociales, autonomía, heteronomía y *habitus*, para establecer tanto las relaciones entre los campos científico, económico y del poder en la obra como el diálogo con la toma de posición brechtiana a mediados del siglo XX. **Resultados:** el análisis social de Pierre Bourdieu permite evidenciar el complejo entramado de tensiones, redes y temporalidades sobre el que se construye *Vida de Galileo* y posibilita la apertura para el diálogo entre las redes de relaciones y las estructuras sociales que se configura entre el discurso ficcional y las condiciones de producción y recepción de la obra. **Conclusiones:** se da cuenta de la relevancia del análisis social como método que, con énfasis en la experiencia práctica, se aleja de la visión esencialista de la obra literaria; las potencialidades del análisis se presentan en la relación de los dos momentos del análisis: de un lado, en el marco de la obra; de otro, en la toma de posición del autor frente a la influencia de los totalitarismos de mediados del siglo XX.

Palabras-clave: Pierre Bourdieu; Campos sociales; Campo literario; Bertolt Brecht; Vida de Galileo.

Resumo

Objetivo: com base no texto *Vida de Galileu*, de Bertolt Brecht, e com base na teoria dos campos sociais de Pierre Bourdieu, o artigo propõe demonstrar o diálogo entre o trabalho e a tomada de posições - política e estética - de Brecht em relação ao papel do intelectual em tempos de crise, bem como uma reflexão sobre a retração do herói, na perspectiva da necessidade histórica e das condições sociais de produção e recepção da obra. **Metodologia:** o estudo utiliza a metodologia da análise social de Pierre Bourdieu e noções como espaço social, campos sociais, autonomia, heteronomia e *habitus*, para estabelecer as relações entre os campos científico, econômico e de poder na obra como diálogo com a posição brechtiana em meados do século XX. **Resultados:** a análise social de Pierre Bourdieu revela a complexa rede de tensões, redes e temporalidades nas quais é construída a *Vida de Galileu* e permite uma abertura para o diálogo entre as redes de relacionamentos e as estruturas sociais configuradas entre o discurso ficcional e as condições de produção e recepção da obra. **Conclusões:** percebe a relevância da análise social como um método que, com ênfase na experiência prática, se afasta da visão essencialista da obra literária; as potencialidades da análise são apresentadas na relação dos dois momentos da análise: por um lado, no âmbito do trabalho; por outro, ao assumir a posição do autor contra a influência do totalitarismo em meados do século XX.

Palavras-chave: Pierre Bourdieu; Campos sociais; Campo literário; Bertolt Brecht; Vida de Galileu.

Introduction

In order to put into practice his methodological proposal for a sociological and historical analysis of a literary text, Pierre Bourdieu begins his essay *The Rules of Art. Genesis and structures of the literary field* (2015) with a study on *The Sentimental Education*, by Gustave Flaubert, novel of which he affirms: "provides all the instruments necessary to its own sociological analysis" (Bourdieu, 2015, p. 19). In order to carry out his approach, Bourdieu delves into the description of the social fields that come into play in the novel –the polarity of art and politics and of politics and business– the tensions and the way in which the hero –Frédéric– develops within them, and notes that the structure of the social space in which Frédéric's adventures take place is also the structure of the social space in which the author is situated, a reading that other scholars had overlooked:

Sentimental Education restores in an extraordinarily exact way the structure of the social world in which it has been elaborated and even the mental structures that, shaped by these social structures, constitute the generating principle of the work in which these structures are revealed. But it does so with its own means, that is, seeing and feeling, with exemplifications or, better still, evocations, in the strong sense of spells capable of producing effects, particularly on the bodies, through the "evocative magic" of words apt to "speak to sensitivity" and to achieve a belief and imaginary participation analogous to those that we usually attribute to the real world (Bourdieu, 2015, p. 63) [Own translation].

Bourdieu's search seeks to distance himself from the essentialist vision that traditionally dominated Western aesthetic history and tries to implant a model of an approximation of the aesthetic experience conscious of historicity and practice, capable of accounting for the social conditions of production and reception of the work of art, in relation to the social space and the fields –of power, literary, artistic, etc.– in which it interacts¹.

In line with the analysis undertaken by Bourdieu on Flaubert's text, *Life of Galileo*, by Bertolt Brecht (2009), it also constitutes a complex encounter of planes, tensions and temporalities that is valued or "intensified" (Bourdieu, 2015, p. 13) –with the potential that the analysis of social criticism allows. Both the

1. Taking distance from the vague notion of context, Bourdieu understands the field as a "network of objective relationships between objectively defined current and potential positions (*situs*) in the structure of the distribution of capital species (or of power) whose possession imposes the obtaining of the specific benefits put at stake in the field, and, at the same time, by its objective relationship with other positions (domination or subordination, etc.)" (Bourdieu, 1989, pp. 3-4).

internal struggles –configured from the fable, the trajectories and the positions of the characters– as well as the particular conditions of production and reading of the text, and the author's status as a theoretician in the artistic field and active participant in the political field, allow for an insight into the network of relationships –and interactions between the literary field and the social space– that is woven into the work in order to offer a “less superhuman” perspective (Bourdieu, 2015, p. 15); with this, Bourdieu himself justified his theoretical-methodological proposal. In the case of Bertolt Brecht, the analysis of the social fields is even more pertinent, considering that Brecht himself always pursued a theater based “less on the individual and more on the community, less on 'destiny' and more in the social coordinates” (Dieterich, 2015, p. 12).

It is worth mentioning that the scope of the work-author consonance does not consist of identifying possible autobiographical data of the writer in the hero's trajectory, as Bourdieu clarifies in his study of *The Sentimental Education*, but in undertaking the objectification of the self, of self-analysis and socio-analysis (2015, pp. 52-53). Therefore, the verification of historically verifiable facts within passages from the fable is not sought, but rather to build networks of relationships and social structures between fictional discourse and the historical conditions of production / reception of the work:

There is no better proof of everything that separates literary writing from scientific writing than this capacity, which belongs to it in its own right, to concentrate and condense on the concrete singularity of a sensitive figure and an individual adventure, which works at the same time as metaphor and metonymy, all the complexity of a structure and a history that scientific analysis has to develop and extend very painstakingly (Bourdieu, 2015, p. 51) [Own translation].

Methodology

Methodologically, this Reflection starts from the analysis of the text *Life of Galileo*, from the perspective of the relations that are revealed between the hero and the fields of science, economics and power. Later, he analyses passages of Brechtian thought that show the author's concern for the role of the intellectual in times of crisis and the resonances of this position in the “individual adventure” of the literary Galileo. Faced with the appearance of the atomic bomb at a time when Brecht was rewriting the work, the scientist's fictional recreation –and, in particular, his retraction– can be read in tune with his taking of the

position (Bourdieu, 1989, p. 5) –politically and aesthetically– in the social space in which the text² was produced and received.

Results

The Social Space of *Life of Galileo*

Life of Galileo fictionalizes the last 30 years of the life of the Italian mathematician and physicist, specifically in the tension between the findings of his scientific practice³ and the power of the Catholic Church; in particular, during the times of prohibitions and repression of the Inquisition in the 17th century. The first scenes of the play already offer a broad panorama of the complex and ambiguous relationships in which social conditions and the hero's task are framed –which could be understood as the field of scientific research⁴– and fields such as that of economic power and that of political power, represented both by the courtly families of Venice and Florence –the Dogo and the Médicis, respectively– and by members of the clergy in Florence and Rome, an institution that, as Brecht himself clarified, is represented from his position of its authority but not from spirituality (Brecht, 2015, p. 322).

As a mutable and contradictory character, Galileo gravitates and takes diverse positions between the fields, to the sway of specific interests, needs and circumstances; in this sense, he interacts indifferently with characters from social backgrounds as distant as those that exist between artisans or instrument makers of the Great Arsenal of Venice and personalities such as the Grand Duke of Medici and Pope Urban VIII, among others.

2. Within the field, Bourdieu takes into account the idea of "the field of positions" as the properties of the occupants and the idea of "the field of taking positions" as the practices of the social agents involved in the field: "Literary or artistic works, obviously, but there are also political, manifest or controversial acts and speeches, etc." (Bourdieu, 1989, p. 4).

3. In the chapter entitled "Galileo and the culture of his time", Eugenio Garin points out that it is precisely during the years 1609 and 1610 when Galileo's work underwent a change of orientation: until then he had concentrated on the problems of movement; beginning in 1609, with the construction of the telescope, the discovery of Jupiter's satellites, observations on Saturn's bodies, and sunspots, among others, research focuses on cosmology (1984, p. 340).

4. According to Garin, the cultural expansion that took place in the Renaissance, in which Galileo's scientific research is framed, occurred outside the university, "either in marginal areas and disciplines of secondary importance [...] Between the 15th and 16th centuries, the new culture did not have its starting point in the university nor did it succeed in such an institutional framework: when it entered the university, it did so, so to speak, in borderlands. Cloisters and chancelleries, courts and 'academies', that is to say, assemblies of freely constituted learned people, are shaped as the centers from which the new knowledge radiates" (1984, p. 319).

According to the first didascalia of the work, Galileo works in a poor study cabinet. He lives with his daughter Virginia, his housekeeper –Mrs. Sarti– and Andrea, the latter's son, an 11-year-old boy who introduces himself as the scientist's main disciple. While the hours of Galileo go by in the didactic investigations that he puts into practice with Andrea, Mrs. Sarti permanently reminds the mathematician that he has debts for which he must answer; particularly, with the milkman, who, as the stars around the Earth do, "will soon begin to circle around our house" (Brecht, 2009, p. 9).

As for economic independence, Galileo is not a "free" man. He must dedicate a good part of his time to giving private classes, an activity that prevents him from dedicating himself to his research. His dependent position is presented in this first part of the text through his interaction with a rich man, Ludovico Marsili, on the one hand, and with a symbol of the cultural field and scientific research, represented by the academy –Mr. Priuli, Secretary of the University⁵–, on the other, a social space that, in turn, lacks autonomy from economic capital.

During this passage from the first scene, Galileo finds himself explaining to Andrea, with the help of an apple, how the Earth revolves around the sun and for what reason it is not possible to perceive its movement, when it is interrupted by Mrs. Sarti, who announces that a man has arrived with a letter of recommendation to take private lessons with him. It is Ludovico Marsili, who has no interest in knowledge of the sciences but seeks to use it as a kind of social lubricant: "LUDOVICO: My mother thinks that a little science is necessary. Everybody drinks their wine with science today, right?" (Brecht, 2009, p. 18). Regardless of the degree of interest that he may have in learning, Galileo sees himself in the need to take the commission, at the sacrifice of Andrea, who obviously is interested in research and who, understood the physical phenomenon of gravity, and must now understand the mechanisms that govern knowledge: knowledge does not belong to those who pursue it in a romantic and consecrated way, but to those who have the means to access it.

LUDOVICO: And as my mother wanted me to see a little of what was happening in the sciences...

GALILEO: Private lessons: ten escudos a month

LUDOVICO: Ok, sir.

5. As mentioned in a previous note, it is necessary to bear in mind that the field of scientific research or the "new culture" –to put it in Garin's terms– is not configured solely on the basis of the university institution but is located in "the dialectic between university and non-university culture" (Garin, 1984, p. 324). This tension is evident in Brecht's work in the network of diverse relationships in which Galileo develops, between academic authorities, private classes, independent research, etc.

GALILEO: What are you interested in?
LUDOVICO: Horses
GALILEO: Mhm.
LUDOVICO: I have no head for science, Mr. Galilei.
GALILEO: Mhm. In that case, it will be fifteen escudos
LUDOVICO: Very well, Mister Galilei
GALILEO: I will have to teach you very early. You will be the one who is affected, Andrea. Naturally, I will have to do without you. You understand that, don't you? You don't pay anything
ANDREA: I'm leaving. Can I take the apple?
GALILEO: Yes (Brecht, 2009, p. 17). [Own translation].

In this sense, the encounter with academic institutions is even more revealing. Once the appointment with Ludovico Marsili ends, Mrs. Sarti announces to her master that the Secretary of the University, Mr. Priuli, is looking for Galileo, who declares that this –the Secretary– is an "important person", since he could represent 500 escudos additional that he had requested from the academy for his research, money that could lead him to do without private classes. However, the news are not what he expects:

THE SECRETARY: I come to deal with your request that your salary be raised to 1,000 escudos. Unfortunately, I cannot support you at the University. You know that math courses do not bring students to college. So to speak, Mathematics is a nonprofit art. And not because the Republic does not highly esteem them. They are not as necessary as Philosophy or as useful as Theology, but they give infinite satisfactions to those who know them! (Brecht, 2009, pp. 18-19). [Own translation].

The field of science and knowledge –in this case, represented by mathematics, physics, philosophy or theology, where the former are in an unfavorable position vis-à-vis the latter⁶– then obeys market dynamics; that is, it responds to a dominated position vis-à-vis economic power.

6. By way of anecdotal information, Eugenio Garin (1984) points out that Galileo was aware of this asymmetric relationship in the recognition of the sciences, so at some point he applied for the title of philosopher. By 1589 the salary of a mathematics teacher was 60 guilders; by 1592 it was 180 guilders and by 1609 it was already 1,000 florines.

Pierre Bourdieu describes this behavior through the relationship between the artistic field and the fields of power, and establishes the notions of autonomy and heteronomy. In the interaction between social fields, no field is entirely independent; the cultural field is inscribed within the field of power, a space of permanent tension, where concepts such as economic capital or political capital come into play. If, in a certain case, economic and political principles are imposed in the cultural field, it presents itself to a heteronomous hierarchy; if, on the contrary, the cultural field manages to free itself from the laws of the market, an autonomous hierarchization is presented (Bourdieu, 1989, p. 15). In the work, both Galileo's practices –to a greater degree– and the decisions of the educational apparatus approach a heteronomous hierarchy in relation to economic centers.

The extensive conversation between Galileo and Mr. Priuli also reveals another phenomenon that underlies this tension between science-academy-power relations and is the apparent freedom that the field of power gives the cultural field, a benefit that for Galileo is nothing more than a control strategy, through an illusion of autonomy, over the dynamics of scientific practices and developments:

GALILEO: Sir, I have too many [students]! I do nothing but teach and when am I going to learn? Man of God, I am not like those know-it-all gentlemen in the Faculty of Philosophy. I am a fool. I don't understand anything. So I am forced to fill in the gaps in my knowledge. And when am I going to do it? When am I going to investigate? [...] And how can I move forward if, in order to live, I have to teach every stupid idiot who can afford it, because two parallel lines intersect at infinity?

EL SECRETARIO: Do not forget that the Republic may not pay as much as some princes, but instead guarantees freedom of investigation [...]

GALILEO: [...]. Your protection of freedom of thought is good business, right? Remembering that the Inquisition reigns and burns elsewhere, you get good and cheap teachers. You compensate yourself for the protection you offer against the Inquisition by paying the lowest salaries (Brecht, 2009, pp. 19-20) [Own translation].

But Galileo's critical position is not only in relation to the other fields. From the opening scene in which he illustrates his findings to Andrea, he declares his position as an agent of the field of science itself and how his research –which continues the line of Copernicus and Giordano Bruno– distances itself from the traditional Ptolemaic system, so “beautiful” but so “immobile”, whose pillar was the idea that the stars revolved around the Earth. The world has entered a new era –philosophical, if you like⁷–, the time of mobility, instability, the breakdown of great certainties and the positioning of doubt as a critical gaze:

GALILEO: [...]. Because where for a thousand years faith reigned, precisely there doubt reigns. Everyone says: yes, that's in the books, but let's see for ourselves. The most celebrated truths are patted on the back; what was never doubted today is questioned [...]. [Own translation].

GALILEO: [...]. And the Earth turns happily around the Sun, and the fishmongers, merchants, princes and cardinals, and even the Pope, turn with it. The Universe, however, has lost its center in one night, and the next morning it had innumerable centers. So now all and none seem like that center, because suddenly there is a lot of room (Brecht, 2009, pp. 12-13).

Not only do eternal truths falter but also multiple centers open: the hegemonic vision is broken to accommodate new versions. The position of Galileo in relation to the field of science in the 17th century is actually the Brechtian manifestation against the awareness of history –political and aesthetic– in Europe in the 20th century –a relationship that will be addressed later–. The conceptual supports, positioned by those in charge of telling and maintaining the story, have entered into crisis and it is time to listen to new voices; voices that not only appear now as part of the record, but are the ones that mark the break.

In her, in her analysis of Brechtian poetry, Hannah Arendt pointed out that beyond the cause of social justice or its approach to history from the perspective of dialectical materialism, Brecht's deepest motive for breaking with tradition

7. According to Garin, the Copernican perspective implied a new vision of things and hence it is conceived as derived from a new philosophical perspective: “It, and only it, allows the radical transformation of the general pictures of knowledge linked to the astronomical revolution. It is no coincidence, therefore, that over almost two centuries philosophers and scientists seem to take over from each other: from Copernicus it is passed to Bruno, from Bruno to Galileo. In the same way that Bruno's work would be incomprehensible without Copernicus, without Bruno - and Kepler well points out - we could hardly conceive of certain general perspectives on 17th century science”(Garin, 1984, p. 274).

was rage at the course the world had taken and at the fact that it was the victors who decided what humanity should record and remember: "Brecht does not write his poetry only for the disadvantaged, but for those men, living or dead, whose voice has never been heard" (Arendt, 2014, p. 132). In *Life of Galileo*, Galileo explains the change of perspective thus:

GALILEO: [...] In Siena, as a young man, I saw some construction workers replace a thousand-year-old way of moving granite blocks with a new and more rational placement of ropes, after discussing five minutes. There and then, I knew it: the old age had ended and a new one was beginning. Humanity will soon know what happens to its home, to the celestial body in which it lives. What the ancient books say is not enough (Brecht, 2009, p. 12) [Own translation].

The field of political power, as mentioned above, is represented by various instances throughout the work, a large part of them related to the cities and the type of government of each one. At the beginning, in the Republic of Venice, is the Dogo, who is deceived by Galileo, when he believes that the mathematician has created the telescope and that this invention will represent important commercial benefits for his court. An event is then organized in which Galileo gives the city the latest product of his *genius*: a tube with lenses on the sides that allows you to see objects that are at a considerable distance up close.

The mathematician claims that it took him more than 17 years to develop the artifact, when in fact he had copied it a couple of days ago from a Dutch model that Ludovico Marsili had told him about in an interview. During the ceremony, in a display of disenchantment, Ludovico says: "And I think I am beginning to understand some of the Science". The phrase symbolizes the demystification of the "creative genius", by showing that what Galileo has achieved is a great gesture as a public relationist in the field of power to preserve his privileged position; in other words, a clever maneuver to maintain his symbolic capital.

Galileo's uncomfortable economic situation in the surroundings of Venice –the little time he has to carry out his investigations– force him to make use of the same relationship, of his political contacts in Tuscany, a fact that reveals a Galileo very close to Cosme de Médicis, The Grand Duke of Florence, to whom he writes to request that he receive him as a mathematician in his court, in order

to obtain "time, time, time, time" to continue his inquiries, which, now, thanks to the telescope, focus on the celestial bodies.

In the letter that he sends to the Duke of Florence, in a subservient and submissive tone –recognized by the author of the letter himself–, Galileo reveals that he has discovered some stars that he plans to call "Medici Stars": "By giving the stars that I have discovered the egregious name of the House of the Medici, I am aware that the elevation to the starry sky of gods and heroes has glorified them, but in this case, on the contrary, it will be the egregious name of the Medicis who would give these stars an everlasting memory" (Brecht, 2009, pp. 39-40).

The tone of the letter evokes those words saturated with praise –this time of a historical nature– that Giorgio Vasari also dedicated to Cosme de Médicis himself at the beginning of his biographies of artists of his time⁸. Praise of this kind was frequent during the Renaissance and could be assumed as disingenuous, since, by exalting the life of someone powerful for posterity, the posterity of the praiser himself was guaranteed. In Brecht's Galileo's letter, furthermore, a clear practical interest is perceptible; Galileo names the stars with the name of the ruler because he needs to change jobs, a fact whose effectiveness is recognized even by the less insightful Virginia: "Of course they will accept you, father, with the new stars and all that" (Brecht, 2009, p. 38).

Although Galileo's position in the field of Tuscan power is privileged –it should be clarified that the Duke is nine years old– his approaches in the Florentine scientific field are subject to much resistance by the guardians of tradition: some monks, a mathematician and a philosopher; defenders of Aristotelian astronomy are radically opposed to Galileo, in a stubborn attachment to their beliefs, to the point that they do not even dare to look through the telescope at what the physicist wants to show them: "THE MATHEMATICIAN: You would be tempted to reply that your eyeglass, by showing what cannot be, is not very reliable, is it?" (Brecht, 2009, p. 46). In this scene, where discourse is silent experimentation, Brecht represents what Bertrand Russell (1975) described as the conflict between the spirit of induction and the spirit of deduction, rather than a simple difference between free thought or fanaticism or between science and religion⁹. Resigned, Galileo responds: "Truth is the daughter of time and

8. "To the Most Illustrious and Most Excellent Mr. Cosme de Médicis, Duke of Florence and Siena", in *the Lives of the most excellent painters, sculptors and architects*, written by Giorgio Vasari (Vasari, 1996, p. 25).

9. In fact, Russell affirms that "[t]hey who believe in deduction as a method of reaching knowledge are forced to take their premises from somewhere, generally from a holy book. Deduction from inspired books is the method of reaching the truth used by jurists, Christians, Mohammedans, and Communists. And since deduction, as a means of achieving knowledge, fails when there is doubt about the premises, those who believe in deduction must be enemies of those who dispute the authority of sacred books" (1975, p. 28).

not of authority" (Brecht, 2009, p. 49). Today, under Bourdieu's lens and the focus of social fields, one could reply to the mathematician that time is the son of authority.

The other center of power with which Galileo is related is that of the highest leaders of the Catholic Church in Rome, where are, among others, Cardinal Barberini –next Pope Urban VIII–, Cardinal Bellarmino and Cardinal Inquisitor. The hero's position in this space is unstable and dependent on who is in charge of making the decisions.

The initial situation at the Roman College, the Vatican's research institute, is discrediting, because while Clavius, the great astronomer, evaluates the works of Galileo, members of the Church scoff at his theses: "A MONK, *playing the clown*: It makes me dizzy. Earth is spinning too fast. Let me hold on to you, professor. *Pretends to stagger and clings to a sage*" (Brecht, 2009, p. 58). Once Clavius –field of science working for the field of power– agrees with Galileo, the hero will obtain the recognition, praise and the greatest symbolic capital that he will achieve in all his work in relation to power. Even, Cardinal Bellarmino offers a dance in his house in honor of Galileo, while his fame spreads throughout the region: "VIRGINIA: Father, the Via del Trionfo hairdresser made me go through the first one and left four ladies waiting. He immediately recognized your name" (Brecht, 2009, p. 64).

The dramatic tension emerges again with a reconfiguration of the field of power around Galileo's work: the Holy Inquisition has decided that Copernicus's theory that the Sun is the center of the universe and remains still, and the Earth is not the center of the universe and it moves, it is "insane, absurd and heretical" and forces Galileo to renounce it; he is authorized to approach it solely as a mathematical hypothesis.

The field of science, facing the Church, is clearly heteronomous: "BELLARMINO: Science is a legitimate and much loved daughter of the Church, Mr. Galilei" (Brecht, 2009, p. 69). The advancement of the knowledge of the hero cannot take place without the approval of the clergy, an institution that, in turn, has also needed science, since the Holy Scriptures have managed to maintain themselves as a hegemonic version thanks to the support they have found in the tradition of Aristotelian astronomy. The relationship, although it marks a dominant and a dominated, with a clear favorable position for the Church, is one of interdependence.

For eight years, Galileo is forced to abandon his investigations until Cardinal Barberini, a friend of science, is named Pope, and Galileo resumes his work. However, sometime later, the Holy Inquisition manifests its intention to question Galileo in Rome. The position of the current power is presented in an intimate conversation between the Pope and the Inquisitor, where Galileo's

ambivalent position for the Church is shown: his theories are dangerous, but commercially they represent benefits; In addition, it has a good position against other strategic agents; its importance to science is also unknown. At that time, it is decided that he will not be executed but that he will be pressured to retract:

THE INQUISITOR: It incites some and it corrupts to the others.

The maritime cities of Northern Italy increasingly demand the astronomical charts of Lord Galilei for their ships. And we will have to compromise, because it is about material interests.

THE POPE: But those astronomical charts are based on his heretical claims. Precisely in movements of certain stars that could not occur if his theory is rejected. You cannot condemn theory and accept astronomical charts.

THE INQUISITOR: Why not? [...]

THE POPE: [...] After all, that man is the greatest physicist of this time, the light of Italy, and he is not just any delusion. He has friends. There is Versailles. There is the Vienna Court. They will classify the Holy See as a sink for rotten prejudices. Don't touch him! (Brecht, 2009, p. 105). [Own translation].

Moreover, the retraction comes. As if it were a death on stage under the provisions of the Greek theater, the moment is not explicitly presented, but the reader learns of it through the sound of the bells of Saint Mark heard by Galileo's disciples and relatives and announcing that there has been no execution. The disappointment is absolute –except Virginia, a Catholic, who rejoices–: the great mathematician has betrayed his own science. Andrea, the closest of his followers, will not be able to forgive him: "ANDREA, *out loud*: Poor country that has no heroes! [...]" GALILEO: No. Poor country that needs heroes" (Brecht, 2009, p. 112).

The Retraction of Galileo and the Taking of Position by Bertolt Brecht

The retraction of Galileo in *Life of Galileo* has been one of the problems most tackled by scholars of Brecht's work. The playwright himself dedicates se-

veral of his comments to this action, which he calls "the original sin of the modern natural sciences":

It would be a great weakness of the work if the physicists were right, telling me with approval that Galileo's retraction was explained, despite some "vacillations", as reasonable, arguing that this retraction had allowed the sage to continue his scientific investigations and deliver them to posterity. Galileo enriched astronomy and physics, and at the same time stripped these sciences of their social meaning. With their criticism of the Bible and the Church, astronomy and physics were for a time on the barricade of any progress. It is true that, despite everything, a change took place in the following centuries, and astronomy and physics contributed to it, but what happened was a change and not a revolution, the scandal degenerated into a dispute between specialists. The Church, and with it the entire reaction, was able to withdraw orderly and more or less retain its power. And those sciences themselves never again occupied that great position in society, they were never again so close to the people [...]. The atomic bomb is, as a technical and social phenomenon, the classic end product of scientific genius and social failure of Galileo (Brecht, 2015, p. 319). [Own translation].

The relationship between science and social sense –or ethics and politics (Suvin, 1998)– of which Brecht speaks is presented in a very explicit way in the eighth scene of the play –before the retraction that will occur in scene 13–, through Galileo's long conversation with a little monk, also concerned about scientific questions and who knows his "truths"; someone who has decided to abandon astronomy because of the dangers that unrestrained research can pose to humanity.

The real problem, affirms the monk, is not the torture that one who defends a certain scientific position may receive, but the fact that the peasants are not prepared for the new theories: "THE LITTLE MONK, *very agitated*: It is the highest motives that must silence us, it is the peace of the souls of the disinherited! [...]. And, don't you think that the truth, when it is the truth, also prevails without us?" (Brecht, 2009, pp. 76-78). And, although Galileo agrees with the monk that scientific development is not about the planets but "about the peasants of Campania", precisely for this reason, he is not willing to remain silent:

GALILEO: No, no, no. Only as much truth is imposed as we impose; the victory of Reason can only be the victory of those who reason. You describe your peasants in Campania as the moss covering their

huts! How can anyone suppose that the sum of the angles of a triangle can contradict their needs! But if they do not mobilize and learn to think, even the most beautiful irrigation systems will be of no use to them. Hell, I see the divine patience of those people, but where is their divine anger? (Brecht, 2009, p. 78) [Own translation].

From the contradiction of the hero to the words he had spoken before the monk, the idea of betrayal follows, understood as a gesture against the people, against science and against the intellectual's own responsibility in its historical moment: “what Brecht asserts that the retraction of a man of the stature and influence of Galileo could not but deal a heavy blow to the interests of free investigation and, more importantly, to the interests of the people as a whole” (Ewen, 2008, p. 299).

Brecht's various testimonies about the work –and, obviously, the work itself– allow us to understand the impossibility of separating the political vision from Brecht's aesthetic vision; in Bourdieu's terms, the two notions would be configurative dispositions of the brechtian *habitus* *Life of Galileo* had three versions –the first, in 1938, which, since Marxism, seemed to be more worker-oriented; the second, between 1944 and 1946 and the last, in which he worked until his death (Ewen, 2008, pp. 287-288)–; one of them was under construction when “the 'atomic age' made its debut in Hiroshima” (Brecht, 2015, p. 320). This fact, for Brecht, meant a different reading of the biography of the founder of the new physics:

The infernal effect of the Great Bomb placed Galileo's conflict with the authority of his time in a new, more hurtful light. We had to make few changes, not a single one in the structure. In the original, the Church was represented as the secular authority, and its ideology interchangeable with any other. From the beginning, the key point of the gigantic figure of Galileo had been his idea of a science united to the people (Brecht, 2015, p. 320) [Own translation].

According to Frederic Ewen, in its first versions the work was conceived in a traditional way; Galileo was positioned as a revolutionary scientist and as close to the people, whose retraction did not imply major damages to his contribution to humanity; it could even be read as a wise gesture that had allowed for the advancement of the sciences. However, with the urgent problems of his time, Brecht radically changes his position towards Galileo and his retraction and the question arises about the responsibility of the intellectual in times of

crisis and terror and if survival poses a problem of "moral cowardice", a matter that always worried him. Under this gaze, retraction became a crime (Brecht, 2015, p. 319):

GALILEO: [...] Science, Sarti, has to do with both struggles. A wobbly humanity in a steam pearly of superstitions and advice, too ignorant to develop its own forces, will not be able to develop the forces of Nature that you reveal to it. Who are you working for? I maintain that the sole objective of Science is to alleviate the fatigue of human existence. If scientists, intimidated by the powerful selfish, are content to accumulate Science for Science's sake, it will be mutilated, and your new machines will mean only new suffering ... As a scientist, I had an exceptional chance. In my time, Astronomy came to the public square. In these very special conditions, the firmness of a man could have caused great commotions. If I had resisted, men dedicated to the natural sciences could have developed something like Hippocrates' oath of physicians: the promise to use Science only for the benefit of Humanity! As things stand, the most that can be expected is a lineage of dwarf inventors, who could be rented for everything [...] And, I gave my knowledge to the powerful to use it, not use it or abuse it, as best suited to its ends [...] I have betrayed my profession. A man who does what I have done cannot be tolerated in the ranks of Science (Brecht, 2009, pp. 123-124) [Own translation].

The issue of the role of the intellectual has been the one that has given rise to the greatest allegorical possibilities in the reception of the work, readings promoted even by the author himself: "The old cardinal (in Scene 4) is interchangeable, with little alteration, for a tory or a Democrat from the state of Louisiana" (Brecht, 2015, p. 337). Frederic Jameson points out that the allegory operates by "removing the element of self-sufficiency from the meaning of a given representation" (2013, p. 182). Within these possibilities, Jameson assumes the retraction of Galileo and his surrender to the power of the Church as

a reference of J. Robert Oppenheimer's acquiescence to the manufacture of the bomb or Bukharin's submission to Stalin (2013, p. 182)¹⁰.

The allegorical exercise has also suggested that Galileo is the incarnation of Brecht or that, as Isaac Deutscher asserts –in what Ewen calls conjectures that cannot be proven (2008, p. 394)–, Galileo was the author's way of representing its complex relationship with the Soviet power of the 1930s:

Brecht agreed relatively well with Trotskyism and was shocked by the purges; but he could not break with Stalinism. He supported it with great doubts, as did those who capitulated in Russia, and expressed it through the figure of Galileo Galilei. It was through the prism of the Bolshevik experience that he saw Galileo kneeling before the Inquisition as if it were a “historical necessity”, due to the spiritual and political immaturity of the people. The Galileo of his drama is Zinoviev, Bukharin or Rakovsky with historical costumes [...] (Deutscher, quoted by Ewen, 2008, p. 293) [Own translation].

In his book dedicated to Brecht, Didi-Huberman (2013) establishes a difference between the notions of party taking and taking position –the latter, also determining in Bourdieu's approaches–; while the first refers to the attitude towards the dominant political instance, in this case totalitarianism, based on discourse and commitment to the Communist Party¹¹, the second, more profound if you like, reveals an awareness to place yourself in time, to desire, to demand; taking a position is to place yourself in the present and aspire to a future (Didi-Huberman, 2013, p. 9).

For the first, the party taking, characterized among other things by its affinity with Stalinism, in a relationship of greater heteronomy than autonomy, Brecht received harsh criticism –which also affected his friend Walter Benjamin–, among which the by Theodor Adorno and Hannah Arendt. Regarding the latter's comments, Didi-Huberman (2013) points out that:

Brecht had, in exile, *the courage to say*: faculty par excellence of the poet, that is, “someone who must say the unspeakable, who must not remain silent in circumstances in which everyone is, and who in fact must be careful so as not to talk too much about things that everyone talks about”. But with his official recognition and his Stalin Prize, he only had the facility to silence the contradictions and thus no longer offered more than “an exemplary document

10. Nikolái Bujarin (1888-1938), ideologist and member of the Bolshevik leadership during the 1920s, executed during the Great Purge of the Soviet Communist Party.

11. Didi-Huberman (2013) clarifies that this takeover, in Brecht, was not entirely naive, since it was able to recognize at one point that it had become a bit doctrinal (p. 105).

of the uncertainty of the relations between poetry and politics, [among other things because of] the doctrinal and often ridiculous adherence [that it gave] to communist ideology". From that moment, on the other hand, her poetry became as bad, according to Arendt, as she was compromised (p. 108) [Own translation].

From the taking of a position, on the other hand, various possibilities of dialogue emerge that allow tracing paths and networks of relationships between the Brechtian theoretical-aesthetic formulation as scaffolding for a practical and historical position against reality –moreover, in it is fully in line with the practical vision that Bourdieu pursues– and the philosophical background of Galileo's activity, according to what was mentioned by Russell and also recognized by Garin (1984). In this sense, without trying to unravel a code that reveals the truth, a fruitful exercise is to read Galileo's words of repentance (Brecht, 2009, pp. 123-124) in the key of art, instead of in the key of science.

Although Brecht had some reservations about *Life of Galileo*, because he considered it "opportunistic" and because to some extent he felt that he deviated from the epic theater (Ewen, 2008, p. 298), there is in it the direct relationship between the obsession with the observation and practical experimentation of its hero and the Brechtian aesthetic method: scientific, historical and practical. Epic theater is the taking of a position in the literary field against two thousand years of Aristotelian hegemony regarding the psychological problem of emotional identification.

For Brecht, from *La Poética* to the 20th century, dramatic art appealed to the feelings of the spectators, leaving aside reason and awareness, a tradition that led to the effects of alienation, autonomization and manipulation; in other words, loss of autonomy. In fact, totalitarianisms themselves resorted to these sentimental reactions in their communicative practices: "Fascism, with its grotesque accentuation of the emotional, and, perhaps in equal measure, a certain deterioration of the rational element in the doctrine of Marxism led me to put more emphasis on the rational element" (Brecht, 2015, p. 21).

Under this perspective, the only way left for the viewer to counter this kind of domination is through a free and critical reflection that is earthly and contingent centered: "renounce the claims of a literature 'for eternity' and assume, on the contrary, a more direct relationship with today's history and politics" (Didi-Huberman, 2013, p. 16). Or, in the words of Roland Barthes (2009), denying man all essence, maintaining that there is no eternal evil but remedial evils and "putting man's destiny back in the hands of man himself" (p. 233) [Own translation].

Jameson (2013) points out that, more than contents, more than a collection of facts, convictions or thoughts, Brecht's true legacy was a method capable of

condensing a position taking into a dramatic theory (p. 14). It is clear, then, that the resources of the preparation of the text like the chronological discontinuity, the high presence of the narrative component in theater, or the whole autonomy of the scenes; the representation resources as the unrecognition or taking a critical distance from the actor in front of his character or confronting the viewer through action; or resources of character creation, such as the formulation of incomplete, contradictory and mutable beings all configure, more than a theory, a practical way of approaching the world.

A well done production is one from which the traces of the trials have been erased (as well as the traces of production are made to disappear in the successful reification of all the goods and products). However, Brecht tears this surface and allows us to observe the actors' gestures and alternative positions, while they try to build their characters: in such a way that aesthetic experimentation in general - to which the role of generating the new, and thus the unexperienced: radical innovation - could also be interpreted as an 'experimental' attempt to prevent reification (something that the other arts, from novels and movies to poetry, painting and musical performance, even random performance, are structurally less qualified to do) (Jameson, 2013, p. 27) [Own translation].

Didi-Huberman (2013) summarizes this position in the idea of “showing by showing what is shown” which is, after all, the way of distancing ourselves from what is known to “make the image a *matter of knowledge* instead of illusion” (pp. 61-62). Isn't this the same line of "disenchantment" that Bourdieu raises when mentioning one of the possible effects of the application of his methodology? Yes, although it is not about finding the Brechtian in Bourdieu –reviving Brecht today could be profoundly anti-Brechtian (Jameson, 2013)–, the abandonment of the approach to the literary text from the essentialist conception creates a delusion, which, then, opens the option of approaching the work from its historical need, a need that, depending on the conditions –in turn historical– of the gaze, will allow entering a game of temporalities and historical interests that, from a practical and social notion, broadens the possibilities of dialogue and the networks of relationships of the work.

The concept of “historical necessity” is addressed by Pierre Bourdieu from the works of the English historian Michael Baxandall (cited by Bourdieu, 2015), who, from his studies on the Renaissance artistic field –both in production and in reception–, proposes that in order to reconstruct the “moral and spiritual eye” of the time, the systems of perception, evaluation, judgment and enjoyment acquired

in the practices of daily life should be reviewed¹². That is, the analysis must refer to the restitution of the social experience of the world (Bourdieu, 2015, p. 465) [Own translation].

In the case of the reception of Brecht's work, shortly after his death, according to Jameson (2013) there were three historically conditioned readings, by three different fields of the social structure, which could be understood as three distinct historical needs: the bourgeoisie, in need of a new aesthetic; the left, in need of a political theory and a communicative strategy that is transferable to new media and situations, and the third world, in need of a figure that gives voice to new expressions of the recently decolonized countries (Jameson, 2013, p. 36).

Conclusions

At the end of the work, years after the retraction, Galileo is being held in his house by the order of the Inquisition. Sick and practically blind, he has continued with some of his work under the strict control of Church officials, who withdraw the documents as he finishes them. Suddenly Andrea Sarti, who has now become a mature man, arrives. The conversation starts in a tense way. He has come to say goodbye, because he has decided to move to the Netherlands. Galileo confesses that he has been writing the *Discorsi*, a new theory on a very old topic: movement, and that because of vanity, he has kept a copy. The young man is pleasantly surprised. He senses that the old sage had everything calculated, that he had retracted himself to secretly continue his advances and watch over the development of science. His admiration for his teacher invades him again. However, it was not so: there was never a plan; Galileo, the son of circumstances, had retracted himself for fear of the physical pain that dominated him when he saw the instruments with which he would be tortured. The motivation for the determination had been practical, contingent, not far-reaching.

If for Pierre Bourdieu, in *Sentimental Education*, the social structure of the space in which Frédéric lives, it is also the structure of the social space in which the author is located, in *Life of Galileo*, with the evident difference that there is no such "reproduction" of the social space for hero and author, there are certain consonances evident that open endless possibilities of relationship for the historical understanding of the work: one of them, the historical need to resort to a method that from the practical experience moves away from universal truths.

12. "(...) at school, in the church, in the market, attending classes, listening to speeches or sermons, measuring stacks of wheat or fabric cuts or solving problems of compound interests or maritime insurance" (Bourdieu, 2015, p. 465).

Thus, on the one hand, based on the economic, didactic, social, academic, and political experience of the hero's daily life and his characters, the work reconstructs the need to attend to this practical path –experimenting, playing, looking through a telescope– to break truths sustained by years under the sources of knowledge that sustain power. On the other hand, based on the aesthetic position, Brecht formulates a theater supported by the social and historical awareness of contingent and earthly problems that seeks to make viewers take distance –and position– from universalizing discourses, through which the totalitarianisms of the early twentieth century sought to impose their violent ideological unification.

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