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On a Morphogenesis of Opera Repertoire Programs as an Instance of Framing in Decision Making

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as an Instance of Framing in Decision Making

Introduction

In the introduction of my Managerial Decision Making course, I was struck by an apparently obvious step in the decision-making process: the choice framework.

Framing of choices is needed to define any decision as such, thus it is not only the first step in decision-making and analysis, but it is also the most critical one.

I am deeply interested in the sector of performing arts, specifically in cultural management, and I've always tried to learn as much as I can about the topic.

During my researches, I came across the article "Measuring emotion through quality in symphony orchestras", by Mafalda Gómez-Vega and Luis César Herrero-Prieto,[1] that discusses the repertoire programming of symphonic orchestras from the supply standpoint of the quality, namely the artistic impact, of the repertoires, and became captivated by it.

The article highlights the possibility of assessing an orchestra's management decision-making by looking at its repertoire programming, and its relevance, with an eye to strategic cultural policies and to public and private funding of cultural products.

By evaluating the programming of the artistic repertoire through the lens of decision analysis, and following the line of reasoning proposed for decision professionals,[2] the aim is to create value in the spending of responsibility and authority made in the decision-making by decision makers.

The significant interest of organizations, individuals and stakeholders has to be taken into account for the decisions to be deliberated. Moreover, risks and uncertainties must be faced, specifically what is known only in terms of probability and what is not known at all.

Decision quality requires an early, actual and effective engagement of decision makers, stakeholders, and subject matter experts. Their engagement in that first, critical step of the choice framework is needed in order to actually and effectively satisfy all the different interests.

Decision-making definitely appears to be a troublesome socio-technical process[3] of complex envisaging in doubtful conditions of alternatives, consequences and objectives.

In particular, in the framing of the decision-making of opera repertoire programming, I will look for aspects that imply knowledge whose relevance influences other variables and objectives.

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[1] https://economiststalkart.org/2019/03/12/measuring-emotion-through-quality-in-symphony-orchestras/

[2] Parnell, Gregory S., Bresnick, Terry A., Tani, Steven N., Johnson, Eric R. (2013) *Handbook of Decision Analysis*. Hoboken, New Jersey: John Wiley & Sons Inc.

[3] Idem, p. 4.

In my understanding, an opera repertoire program can be conceived as the result of a dynamic process, a process of individuation, in accordance with an epistemology of problems that is related to an ontology of processes[4].

An ontology of processes differs from an ontology of essences, as far as the process of individuation is concerned: the latter individuates an entity if it possesses a definite set of characteristics, and such characteristics resemble the modelling essence, which is the purest exemplification of the entity at subject (a static genesis); the former individuates an entity by virtue of a morphogenetic process that constitutes the entity as individuated (dynamic genesis).[5]

The morphogenetic approach to the process of individuation entails an epistemology of problems that differs from an epistemology of solutions: the latter knows by means of identity and regularity, by means of reproduction (deduction, induction and iteration) and of transmission of truth, being normative and normalizing; the former knows by means of "well posed problems,"[6] by a framing, I would add, of problems that acknowledges the singular and the ordinary, the important and the unimportant, the significant and the irrelevant.[7]

In order to evaluate all of this, as a first step in my research I assessed the distributions and frequencies of the opera programs performed, based on a database of the 1000 most played operas, by title and by composer, in Italy, France, Germany and the UK, from season 2004-2005 to 2018-2019[8].

Subsequently, from the "black box" of repertoire programming as a decision-making process, I looked for virtual patterns that could characterize the opera repertoire programming as an instance of framing in decision-making.

It is about time, through the following chapters, to recall the steps of my journey.

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[4] Trevisan, P. (2017) *Reshaping Opera. A Critical Reflection on Arts Management*. Cambridge Scholars Publishing.

[5] Mastroeni, F. (2010). *"Conoscere per mezzo di ciò che non si sa". Scienza dei problemi e problemi della scienza tra Gilles Deleuze e Manuel DeLanda* in Metàbasis.it - RIVISTA INTERNAZIONALE DI FILOSOFIA ONLINE CON PEER REVIEW, novembre 2010 anno V n° 10, p.3. At http://www.metabasis.it/articoli/10/10_Mastroeni.pdf .

[6] De Landa, M. (2002). Intensive Science and Virtual Philosophy. London-New York: Continuum International Publishing.

[7] Mastroeni, F. (2010), p.12.
[8] https://www.operabase.com/statistics/en

1. Theory and literature on repertoire programming: a review

1.1 Evaluating the repertoire of performing and musical arts: indices of quality

Repertoire programming in performing arts is part and parcel of cultural institutions' management as a decision making issue.

With the publication of *Performing Arts: an Economic Dilemma* in 1966, the economists Baumol and Bowen actually created the subject of cultural economics, and from then the Baumol's cost disease spread throughout the literature and the practice.[9]

Such cost disease is the escalation of the real costs that occurs in labour-intensive industries (like the arts, health care and education), that is hard to face utilizing labour-saving technical progress because the technical progress in these types of industries is either small or non-existent.

For the purposes of this thesis, the idea of disease is indeed evocative.

Opera repertoire programming is, like most decision-making processes, troublesome. I would say a "disease" process, from the Old French *desaise*, *des*-"without, away" + *aise* "ease",[10] so literally a dis-ease process.

In the article titled "Measuring emotion through quality: evaluating the musical repertoires of Spanish symphony orchestras",[11] the authors Mafalda Gómez-Vega and Luis César Herrero-Prieto deal with the repertoire programming of symphonic orchestras from the supply standpoint of the quality, namely the artistic impact, of the repertoires: << Our study specifically centres on the works which deal with the quality of the repertoire by assessing its particular features, establishing a series of guidelines to generate indicators that are comparable amongst different institutions.>>[12]

The authors recall that, as a matter of fact, cultural economics' origin deals with the coping of a chronic costs disease, the financial deficit affecting the institutions <<at times offset by an "artistic deficit" in the programming>>.[13]

In the *Handbook of Decision Analysis*[14], written for decision professionals, <<practitioners who respect the theoretical foundations of decision analysis>>[15], along with the consideration of soft skills, there is a chapter

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[9] Baumol, W.J. and Towse, R. ed. (1997). *Baumol's Cost Disease: The Arts and Other Victims*. UK: Edward Elgar Publishing Ltd.

[10] https://www.etymonline.com/search?q=disease

[11] Gomez-Vega, M., Herrero-Prieto. Luis C. (2019) *Measuring emotion through quality: evaluating the musical repertoires of Spanish symphony orchestras*. Journal of Cultural Economics, 43:211-245.

[12] Idem, p.214

[13] Ibidem.

[14] Hoboken, New Jersey: John Wiley & Parnell, Gregory S., Bresnick, Terry A., Tani, Steven N., Johnson, Eric R. (2013) *Handbook of Decision Analysis*. Sons Inc.

[15] Ibidem (p.XV)

dedicated to framing the decision opportunity, and for this purpose it is provided a listing[16] of technical products (such as vision statement, decision hierarchy, issue identification matrix, qualitative influence diagram, and study schedule) that engage decision makers (DMs), stake-holders (SHs) and subject matter experts (SMEs).

If quality, or the artistic impact, of repertoire programming were a shared intersubjective value, that is, for instance, if Bach, Beethoven and Mozart, are appreciated as famous quality composers, they should be part of programming repertoires, independently of the cultural institutions' location.

Apparently, this is not the case. The above mentioned article states that << the level of human capital is directly correlated to repertoires that are more contemporary and offer more innovation, whereas the opposite effect is apparent with programmes based on the best-known composers. This latter kind of repertoire is, in contrast, related to more densely populated areas and that have a higher mean population age>>.[17]

An influence diagram (ID) represents decisions as a matter of knowledge relevance: knowledge about one event is relevant for the knowledge about another one.

An ID is a tool not only for decision framing, in order to model the decision-making, by means of identifying the variables and the decisions to be included, but it is also for communication to decision makers, stakeholders and subject matter experts.

In their seminal paper "Influence Diagrams",[18] Howard and Matheson point out that an ID is capable of addressing the three levels of relation, function and number, both in deterministic and probabilistic cases, thus forming <<a bridge between qualitative description and quantitative specification>>.[19] In IDs, the following definitions are used:

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[16] Ibidem (p.6)

[17] *Measuring emotion through quality in symphony orchestras*, by Mafalda Gómez-Vega and Luis César Herrero-Prieto at https://economiststalkart.org/2019/03/12/measuring-emotion-through-quality-in-symphony-orchestras/

[18] Howard, Ronald A., Matheson James E.. *Influence Diagrams.* Decision Analysis Vol. 2, No. 3, September 2005, pp. 127–143. INFORMS

[19] Idem, p.127.

THE PROBABILITIES ASSOCIATED WITH ALEATORY
VARIABLE B DEPEND ON THE OUTCOME OF
ALEATORY VARIABLE A

THE PROBABILITY OF ALEATORY VARIABLE D
DEPENDS ON DECISION C

THE DECISION MAKER KNOWS THE OUTCOME OF
ALEATORY VARIABLE E WHEN DECISION F IS MADE

THE DECISION MAKER KNOWS DECISION G
WHEN DECISION H IS MADE
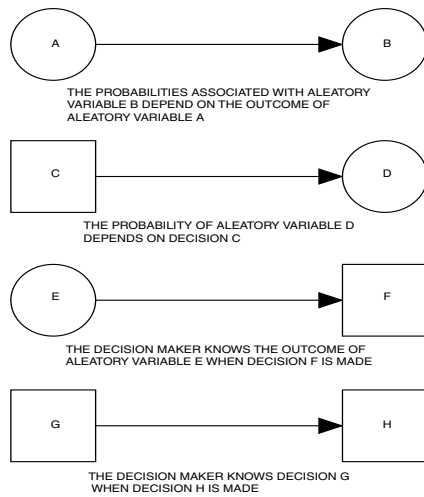
Figure 1 – <u>Definitions used in Influence Diagrams</u>[20]

So, restating briefly the above outlined reasoning, the relevance of decision-making, that is of the allocation of resources that is not easily revocable,[21] in cultural management is an economic and social issue.

Such decision making, indeed, has a social impact but the related economic and social environment have an impact on it too.

In terms of an initial influence diagram (IID), the decisions influencing the programming of the symphonic repertoires, according to the article by Gómez-Vega and Herrero-Prieto,[22] can be described as follows:

[20] Howard, Ronald A., Matheson James E.. *Infuence Diagrams.* Decision Analysis Vol. 2, No. 3, September 2005, pp. 127–143. INFORMS (p.130).

[21] Parnell, Gregory S., Bresnick, Terry A., Tani, Steven N., Johnson, Eric R. (2013) *Handbook of Decision Analysis*. Hoboken, New Jersey: John Wiley & Sons Inc., p.2.

[22] *Measuring emotion through quality in symphony orchestras*, by Mafalda Gómez-Vega and Luis César Herrero-Prieto at https://economiststalkart.org/2019/03/12/measuring-emotion-through-quality-in-symphony-orchestras/
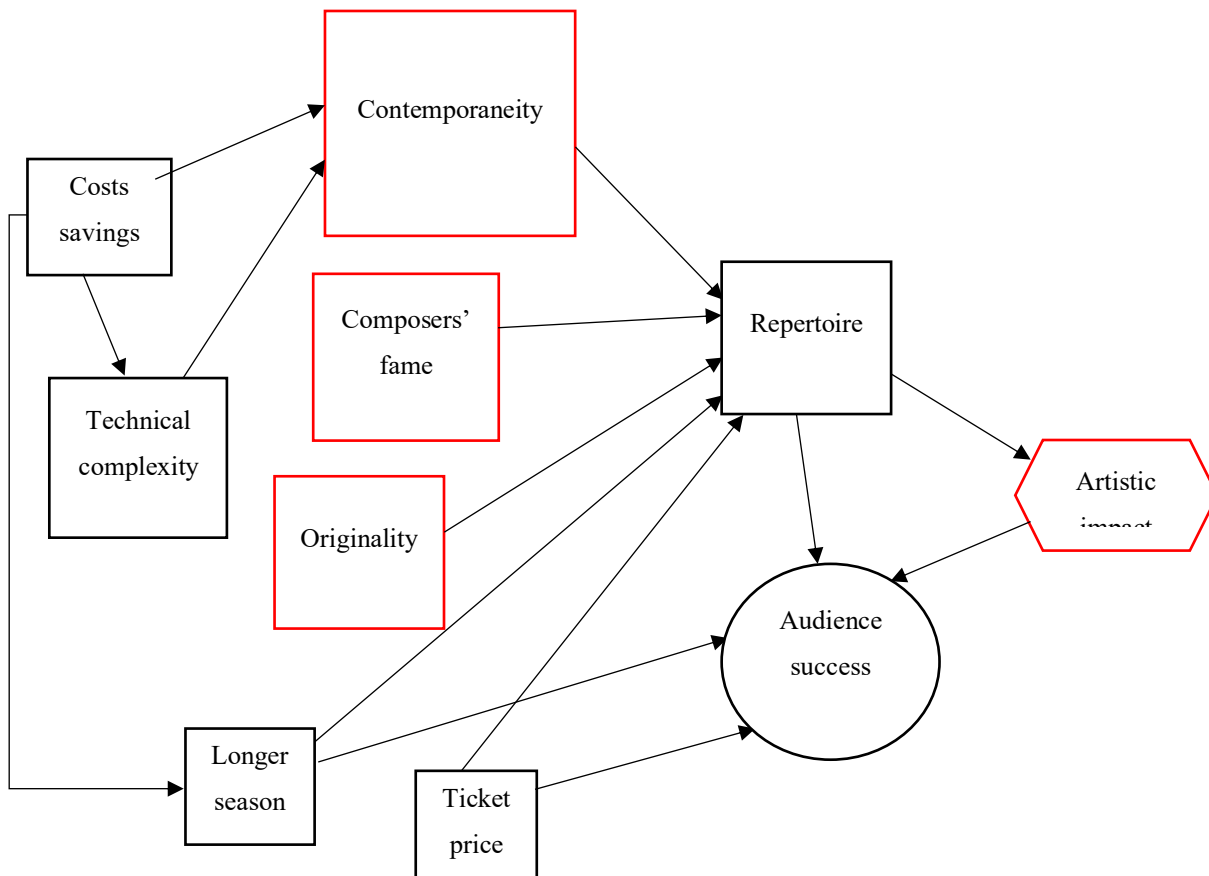
Figure 2 - <u>Repertoire Programming – An Initial Influence Diagram (IID)</u>

LEGENDA:

→	<u>Influence:</u> knowledge about relevance	◯	<u>Chance:</u> cannot be controlled directly by the DM
▢	<u>Decision:</u> under the control of the DM	⬡	<u>Objective:</u> value/desirability of possible outcomes

The literature on the efficiency of musical institutions takes into consideration the repertoire programming not only from the standpoint of the demand, that is for example the audience success, but also by means of the assessment of the quality of the repertoire, throughout indicators generated in order to make viable comparisons among the considered institutions.

Since 1985, some authors <<developed a measure of the 'innovativeness' of the repertoires of U.S. resident non-profit theatres and test hypotheses about the relationship between environmental and organizational factors and innovation. Access to potential patrons rich in cultural capital appears to make theatre repertoires

more innovate, while dependence upon the market (as opposed to grants and contributions) is associated with greater conformity of repertoire. Theatres with smaller budgets to maintain, fewer seats to fill, and less need for earned income are less conformist in their programming than are large theatres with capacious houses and high rates of earned income. Holding size and dependence on earned income constant, there is no evidence that age, structural differentiation, or the presence of subscription audiences-all associated with 'institutionalization' - have either a negative or a positive impact on innovation. New York theatres innovate more, and are less negatively affected by growth and the market, than theatres elsewhere in the U.S. It is suggested that artistic innovation has come to depend overwhelmingly on the behavior of formal organizations and that, consequently, we must understand the principles that govern the relationship of such organizations to their economic and social environments in order to understand artistic change.>>[23]

Beyond the originality or the innovativeness of repertoire programming, measured through a conventionality index, other indices have been proposed as for the analysis of quality in repertoire programming: in 1987,[24] ratio of the best-known composers, index of contemporaneity and ratio of concert type programmes.

With results that showed link between repertoire and the capacity of concert halls but not with the size of budget, innovation and artistic quality were considered also by taking into account institutional criteria, in order to assess their consequences in the decision-making choices of repertoire programming.

Thus, the works of Neligan (2006)[25] and O'Hagan and Neligan (2005)[26], studying respectively German and British theatres, focused <<on determining the importance of budget when taking greater risks in the programme. They find that the higher the percentage of total income accounted for by public grants, the more non-conventional the repertoire of a theatre is.>>[27]

If the size of the audience is affected by the characteristics and the quality of the programme,[28] it can also be said that repertoires depending on public funding appear more standardized and safe, in particular << in contexts where private funding is not as readily accessible, like in Canada, arts organizations have more

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[23] Di Maggio, P., & Stenberg, K. (1985). *Why do some theaters innovate more than others? An empirical analysis.* Poetics, 14, 107–122.

[24] Ito, T., & Domian, D. (1987). *A musical note on the efficiency wage hypothesis. Programmings, wages and budgets of American Symphony Orchestras.* Economics Letters, 25(1), 95–99.

[25] Neligan, A. (2006). Public funding and repertoire conventionality in the german public theatre sector: An econometric analysis. Applied Economics, 38(10), 1111–1121.

[26] O'Hagan, J., & Neligan, A. (2005). State subsidies and repertoire conventionality in the nonprofit English theater sector: An econometric analysis. Journal of Cultural Economics, 29(1), 35–57.

[27] Gomez-Vega, M., Herrero-Prieto. Luis C. (2019) *Measuring emotion through quality: evaluating the musical repertoires of Spanish symphony orchestras*. Journal of Cultural Economics, p.215.

[28] Werck, K., & Hwyndels, B. (2007). Programmatic choices and the demand for theatre: The case of Flem- ish theatres. Journal of Cultural Economics, 31(1), 25–41.

incentive to keep expenses under control. This can be understood in terms of resource dependence where government funding bodies, due to a homogeneous set of demands, put pressure on organizations to control their expenses and reach greater audiences. Using panel data covering a period of 8 years and forty-eight orchestras, the results show that Canadian orchestras, when compared to US ones, achieve a lower rate of expense increases over time and are more reactive to economic downturns.>>[29]

So, dealing with the quality of symphonic orchestras' repertoire, in literature some measures of quality have been proposed and can be synthetized as indexes of conventionality, of best known composers, of contemporaneity and of risk.

With such indexes, different explanatory factors have been considered: population, education, unemployment rate, employment rate in management tasks, ticket price, public institution, budget, conservatism, per capita rent, public subsidy, revenue through activities, university graduates, demand, years in existence, management, origin of the funding resources, public subsidy, capacity, infrastructure, state capital, season-ticket holders, competition, dramatic repertoire, conventionality of the conductor, no. of season-ticket concerts, occupation rate, revenue by type and origin, mean salary, special concerts, years in existence, population of the city, average age in the area.[30]

As a conclusion of this streamlined review about quality, I would point out that, both for arts policy and cultural management, the assessment of artistic quality is indeed troublesome and the search for evidence of artistic quality may resemble the search for the Holy Grail.[31]

Not only the task of evaluating quality implies the definition of whom should judge and of the purpose of the evaluation itself, leading to differences in perspectives, values and metrics, but also it may misunderstand <<the freedom and conformity of individual experience.>>[32]

Quoting the contemporary sociologist Zygmunt Bauman, for individuals as consumers, <<Life organised around consumption works without norms, it is guided by seduction, ever rising desires and volatile wishes.>>[33]

It appears to be a matter of subjectivity, thus difficult to articulate and to measure.

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[29] McGrath, T., & Legoux, R. (2017). Balancing the score: The financial impact of resource dependence on symphony orchestras. Journal of Cultural Economics, 41(4), 421–439.

[30] Gomez-Vega, M., Herrero-Prieto. Luis C. (2019), p.216.

[31] Tomanová, J. (2018). *Understanding artistic quality and audience empowerment, what are they and why they can't be without each other?* in Breaking the Fourth Wall: Proactive Audiences in the Performing Arts, eds. Bonet L. and Négrier. Kunnskapsverket rapport 5/2018, at https://www.bespectactive.eu/wp-content/uploads/2019/09/Breaking-the-Fourth-Wall_publication.compressed.pdf.

[32] Idem, p.78.

[33] Bauman, Z. (2000). *Liquid modernity*. Cambridge: Polity Press, p.76.

In my understanding, it is not a matter of subjectivity of the experience, as I will try to articulate in this thesis.

Seduction, volatile wishes and rising, like a wave, desires recall the micro-sociology of Gabriel Tarde (1843-1904), which acknowledges imitation and innovation as fundamental flows of difference and repetition: re-presentation, representation, to present again or anew, for an additional time, in a new or different form, a dramatic production or performance…

1.2 Managing the arts management in opera houses

In the above outlined literature, from the Mafalda Gómez-Vega and Luis César Herrero-Prieto article specifically considering the symphonic orchestras' repertoire, we can find only three references that specifically take into consideration the opera repertoires.

As far as opera programming repertoire is concerned, in 2000 the decision-making process of American opera companies was considered[34] by combining the financial program data with socio-economic data, testing the << relationships between risk-taking by opera companies and socio-economic variables such as wealth, government funding, and donor involvement.>>[35]

It being understood that opera repertoire programming was affected by education level, wealth and conservatism as socio-economic variables, the study shows that, on the one hand, the repertoire conventionality resulted as encouraged by local government funding, on the other hand, the federal support encouraged program risk-taking.

In 2001, Heilbrun[36] showed empirical evidence that though opera companies and productions were, from 1991 to 1998, a growing industry, <<changes in the character of repertory over time suggest that since the early 1990s U.S. companies have been shifting their programming toward a more popular, less demanding repertory. Presumably, this is done to ward off financial pressure.>>[37]

A study in 2001, concerning the Royal Opera House, Covent Garden (ROH),[38] deals with the "managing of management", addressing the << financial management at the ROH over the last 25 years. The underlying issues of the purpose of arts subsidy, how it should be managed by the government and the Arts Council, and what are appropriate performance indicators have now been openly confronted in a new funding agreement

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[34] Pierce, J. L. (2000). *Programmatic risk-taking by American opera companies*. Journal of Cultural Economics, 24 (1), 45–63.

[35] Idem, abstract.

[36] Heilbrun, J. (2001). *Empirical evidence of a decline in repertory diversity among American opera companies 1991/92–1997/98*. Journal of Cultural Economics, 25(1), 63–72.

[37] Idem, abstract.

[38] Towse, R. (2001). *Quis custodiet? Or managing the management: The case of the Royal Opera House, Covent Garden*. International Journal of Arts Management, 3(3), 38–50.

between the Department for Culture, Media and Sport and the Arts Council. This paper considers these questions and looks at performance indicators as a bridge between cultural economics and arts management.>>[39]

Paola Trevisan, a researcher at the Management Department of Ca Foscari University of Venice, Italy, where she also teaches Accounting and Business Administration, published her 2016 Doctoral thesis in 2017 with the title "*Reshaping Opera. A Critical Reflection on Arts Management*",[40] narrating the successful case of La Fenice, Venice's main opera theater, addressing the supposedly endemic financial crisis that affects the performing arts by taking into consideration the fiscal troubles of opera houses and thus questioning <<the soundness of the strategies adopted by these organizations, …the administrative abilities of their general managers.>>[41]

Following Trevisan's line of reasoning, the application of managerial processes to arts organization may appear to be somehow incongruous, because rationality and normativity, productivity and efficiency, are not deemed naturally artistic: one would not say them forms of art for art's sake. Art and commerce appear to struggle each other.

Moreover, the recognition of a social mission fostered by subsidizing arts, aimed at preserving cultural heritage, community and social classes inclusion and participation, leads to a possible misunderstanding of the benefits entailed by the managing of arts management.

By means of the implementation of a <<business strategy based on a semi-repertory production system…the case of La Fenice appears to be an arts management success story>>. [42]

A virtuous circularity may come true, by means of an increased reviving of repertory operas that produces as return additional resources to be committed towards an originality of repertoire programming and performing.

<< When interpretations of past works are new and presented for the first time, we call it a new production. After the first presentation of a new production, it can become part of a repertoire and be performed in the following seasons (or more than once in the same season). A performance of a repertoire pieces is called revival.>>[43]

If in opera houses artistic innovation is understood as a matter of re-interpretation, that is repetition that variates the performing of operas, artistic innovation spreads through conservatory repertoires.

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[39] Idem, abstract.

[40] Trevisan, P. (2017) *Reshaping Opera. A Critical Reflection on Arts Management*. Cambridge Scholars Publishing.

[41] Idem, abstract.

[42] Trevisan, P. (2017), p.1

[43] Trevisan, P. (2016) *Reshaping Opera: A Critical Reflection on Arts Management*. Doctoral thesis at http://hdl.handle.net/10579/8355 http://dspace.unive.it/bitstream/handle/10579/8355/807648-1175941.pdf?sequence=2 p.17-18

Trevisan recalls that, arranging chronologically the folders labeled with the titles performed by year, dating from 2002, in order <<to merge folders….At the beginning there were very few documents to throw away and no folders to merge. But when I approached the most recent folders, something changed. I noticed that some titles were more recurrent. I started merging the folders, and eventually I was able to empty the last two shelves. While I was watching the huge La Traviata folder (in which I had to stick several labels in order to be able to write all the years in which it was performed) I naively asked to my colleague: "Why did you start performing the same productions so many times?". Her reply was: "Don't you have a master in management?". "Yes, I have", I said. "Then you should realize it by yourself!", she concluded.>>[44]

Trevisan points out that the season's repertoire programming is, of course, not only a matter of conservative or innovative identity of the considered opera house as long as of its artistic strategy, but also of financial feasibility: if expenses are due to particular artistic personnel, costumes, stage sceneries, lights, specific rehearsals, nevertheless budget constraints can be respected.[45]

As far as the costs of opera are concerned, it can be concluded that new productions are << characterized by relatively high fixed costs, but in the longer period the average cost per performance declines because of the little marginal cost of each performance that comes after the first … giving the opera house the possibility to take advantage given by economies of scale.>>[46]

In terms of production strategy, the distinction between the "season" (staging of new or guest productions) and the repertory system, with the former traditionally preferred in Italy and in the UK and the latter favored in Germany, is mainly due to the availability of a permanent company of singers, performing different titles, in the considered opera house.[47]

There are supporters and opponents of the above mentioned systems, and the debate is alive as for their consequences in terms of artistic standards, of possible innovation and experimentation, of productivity and efficiency, of burden by high fixed costs without taking <<advantage of the relative low marginal costs of additional reruns.>>[48]

According to Trevisan, as far as La Fenice season's program is concerned, a draft is proposed to the chief executive by the artistic director, <<Alongside the one or two big projects, other titles are defined in order to create an equilibrate season program, with an overall artistic unity and coherently fitting with the theater's own history and tradition. A good artistically balanced program mixes tradition and innovation, including both

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[44] Idem, p.6.

[45] Idem, p.18.

[46] Trevisan, P. (2016), p.22.

[47] Idem, p.25.

[48] Idem, p.26.

classics and modern or contemporary operas. In addition the artistic program should respect financial sustainability and technical feasibility criteria.>>[49]

The managerial turn that achieved the making of the virtuous circle linking financial and artistic goals, narrated by Trevisan, started in early September (in view of tourism in Venice) 2009, with twelve performances of La Traviata, implementing an artistic strategy that mixes <<the traditional Italian stagione approach with the repertory strategy typical of the German system. During some periods of the year (the most touristic) the programs tend to privilege repertory pieces. For the rest of the year, the program consisted on new and original productions, in line with the more traditional seasonal approach.>>[50]

Therefore, a semi-repertory strategy at La Fenice, with new productions aimed at enriching the repertory, entailed: on the one hand, from 2005 to 2015, the number of new productions did not change much and revivals of repertory pieces were added, for a greater variety of titles and number of performances; on the other hand, from 2003 to 2015, the number of revivals per production is linked to the recently (between 2010-2014) implemented strategy (Figure 3 and 4).[51]
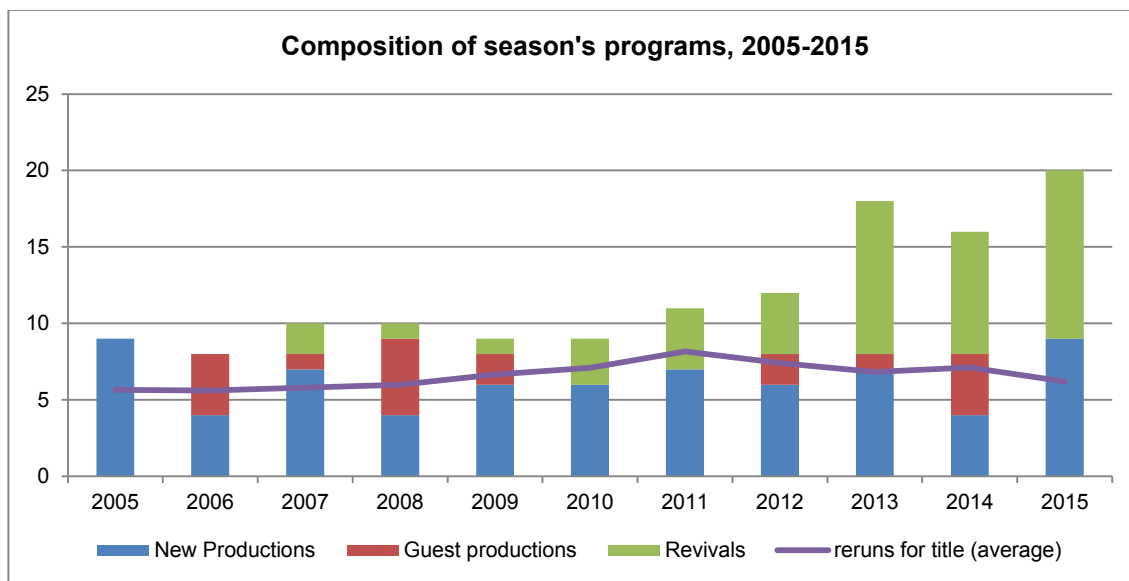
Figure 3 – La Fenice Season's programs (2005-2015)

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[49] Idem, p.53.

[50] Idem, p.62.

[51] Trevisan, P. (2016), p.62-63.

Number of revivals per production (2003-2015)
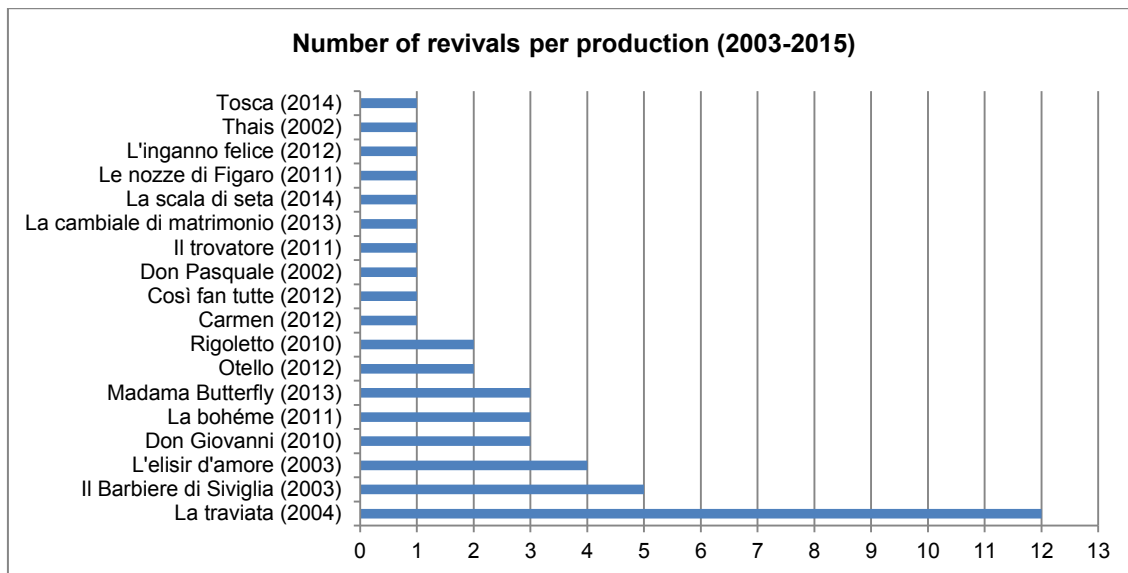
Figure 4 – La Fenice Revivals per production (2003-2015)

By the way, La Fenice's repertory, revival choice, is faithful to the list of the ten most performed titles in the world in 2013-2014, with the exception (to be readily integrated by La Fenice's production in 2015) of Die Zauberflote, as pinpointed by Trevisan.[52]

1.3 On creativity, innovation and their genesis

1.3.1 The struggle between economic and artistic logic

For the purposes of this thesis, though appreciating and fostering the circular virtuosity of better management-better arts, I will overfly Trevisan's narration of the improvement of productivity, against the Baumol's cost disease, gained by an enlightened cost management system and a dedicated marketing, as well as the becoming a business of the opera house.

As for the "managerialese", the use of managerial concepts and the related vocabulary, along with the human factor in managerialism (the possible conflicting coexistence of artistic and managerial logics),[53] I will make reference later.

My interest is in the framing of opera repertoire programming and the supposed need of its "legitimation".

		Composer	Title
1	it (#1)	**Verdi** (#1)	La traviata (659)
2	fr (#1)	**Bizet** (#1)	Carmen (548)
3	it (#2)	**Puccini** (#1)	La bohème (522)
4	it (#3)	Puccini (#2)	Tosca (479)
5	at (#1)	**Mozart** (#1)	Die Zauberflöte (474)
6	it (#4)	Puccini (#3)	Madama Butterfly (462)
7	it (#5)	**Rossini** (#1)	Il barbiere di Siviglia (453)
8	it (#6)	Verdi (#2)	Rigoletto (445)
9	at (#2)	Mozart (#2)	Le nozze di Figaro (420)
10	at (#3)	Mozart (#3)	Don Giovanni (391)

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[52] Trevisan, P. (2016), p.64.

[53] Idem, p.65-81.

Following Trevisan's precious narration, in accordance with an opera house chief executive statement, <<The clear message is that La Traviata "pays" other operas, and without performing it there will not be enough resources to build-up other new productions.>>[54]

According to an opera house artistic director, <<"I have deeply studied Opera History. Mozart, Verdi and other big composers, were all concerned about, not only political, but also financial limits. Don't you think that Puccini would have loved to have the choir on stage during the second act? He couldn't because the costumes would have cost too much! If Verdi and Puccini had such kind of concerns, who am I to disregard them?">>[55]

According to an opera house marketing and communication director, <<"culture is an industry. Whether you like it or not"…"it's not me who said it, the Frankfort's school did!">>[56]

According to Trevisan, in my understanding, their pointed out lack of managerial or accounting background supports the neglect of the tension art-business and purports the narration in managerial language of numbers, tables, cause-effect formulas, music history stories and anecdotes:<< The strength of managerial language is that it allows comparability and gives a sense of rationality and objectivity, which helps in gaining legitimacy. The legitimation of managerialism at La Fenice is sought through a peculiar managerial language spoken by the managers and enriched with artistic, social, or philosophical reflections, according to each one's role and field of expertise.>>[57]

Moreover, in order to legitimize the implementation of managerial principles, it is claimed their relevance for social ends, taking into account the social impact of the current economic crisis.

According to Trevisan's conclusion, <<the recourse to what I have called "artistic managerialese" and the instrumental use of the social purpose of the arts, is always made as a way to "defend" management from the critiques, as if managers attempt to convince the interlocutor about the goodness of their choices. This rhetorical practice appears to be in contrast with the functionalist approach to management studies and with the vision of management as a rational discipline, which would not require any rhetorical support>>.[58]

She adds:<<what happens when managerial innovations come from inside the organizations, by people who don't have any background in management or accounting? What is the role of management in that case, how it is used and what is the meaning attached to it? Is it just a rhetoric use, an exercise in style, a way to gain

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[54] Idem, p.85.

[55] Ibidem.

[56] Ibidem.

[57] Trevisan, P. (2016), p.86.

[58] Idem, p.91

power and legitimacy, or are management principles "scientifically" applied in order to achieve better (both financial and artistic) performances?>>[59]

The coming upon face-to-face of artistic values, managerial logic and public service calling, highlights the role of creative professionals in cultural industry, of creatives in career.

Artistic creativity does not appear anymore the one of solitary and unstable individuals.

<<Musicians and singers in the opera house have permanent job contracts…Unions are present and relevant in the decision making process…They are nothing like independent, free-lance, or autonomous talents working in insecure and precarious conditions. On the contrary, they are perceived to be much protected (some would say "spoilt") by those privileged contractual provisions on which they firmly stick, negating to the management of the opera house any exception that can damage their interests.>>[60]

Moreover, to call them "artistic masses" may misunderstand the artistic complexes of highly educated, talented and professional artists, that musicians and singers constitute.

Trevisan's line of reasoning in understanding creativity as far as opera is concerned, given its peculiarity, among performing arts, of mixing dramatic, musical and scenographic facets,

points out the interpretational dimension of performances, provided by all those involved, technicians included, both as creative mass and soloists, also in a practical sense, in the staging of an opera.

Because of opera repertoire programming, artists in opera houses struggle with the paradox of being interpreters and executors at the same time, as subjects of a managerial govern and rationale, subjected to playing dozens of reruns of La Traviata in one season for commercial reasons, part and parcel <<of the commodification of art and culture in the cultural industry>>.[61]

Between utility and artistry appear to struggle economic logic and artistic logic. But they are both logic, are not they?

1.3.2 A matter of narration

According to an history and an etymology for "logic", << Middle English *logik*, from Anglo-French, from Latin *logica*, from Greek *logikē*, from feminine of *logikos* of reason, from *logos* reason — more at LEGEND>>.[62]

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[59] Ibidem.

[60] Idem, p.95-96.

[61] Trevisan, P. (2016), p.101-103.

[62] https://www.merriam-webster.com/dictionary/logic

So, legend: <<Middle English *legende*, from Anglo-French & Medieval Latin; Anglo-French *legende*, from Medieval Latin *legenda*, from Latin, feminine of *legendus*, gerundive of *legere* to gather, select, read; akin to Greek *legein* to gather, say, *logos* speech, word, reason>>.[63]

A matter of narration, indeed.

Who and what is artistic, creative, innovative? Surely, one must contextualize their meaningfulness.

<<The peculiarity of the live performing arts is that every event is unique and unrepeatable, since it is limited to the time and the space in which the performance takes place. Every performing arts production is innovative in some degree; at the extreme level, one could say that every performance presents some characters of novelty, with respect to the previous one. On the other hand, some would argue that revivals (works already presented in the organization's self-past) cannot be considered innovative, but also the innovative value of new production and new works can be contested as long as they re-propose existing styles and conventions… This makes artistic innovation a controversial concept, highly dependent on the chosen referent object and, eventually, on the subjective and context-based meaning attached to it.>>.[64]

1.3.3 On defining innovation

Guided by Trevisan's line of reasoning, it now appears a paradox originating from the tension between the ideas of managerial innovation and artistic innovation. The latter would deal with the nonconformity of repertoire programming with respect to previous season/repertory: in literature, many studies show a trend towards standardization and conformity of repertoire, entailing at least two interesting conclusions.

First, <<the opera field, as any other industry, follows an industry cycle which, at a certain point, reaches a stage of maturity. In mature industry, innovation shifts from product to process innovation. Thus, the conformity of the repertoires which signals the conservativeness of the opera sector, is a result of the ageing of the art form>>.[65]

Second, << the background of the general manager is usually taken into consideration to measure the relative power of managerial over artistic logics...called "organizational climate", suggesting that arts managers with managerial background are less prone to stage risky productions than those with artistic background.>>[66]

Trevisan points out that the nonconformity argument has its weakness, though its success is certainly due to its strength as far as its use for measurement and comparability is concerned.

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[63] https://www.merriam-webster.com/dictionary/legend#etymology

[64] Trevisan, P. (2016), p.112-113.

[65] Trevisan, P. (2016), p.114.

[66] Idem, p.114-115.

As a matter of fact, at La Fenice the conformity of repertoire programming to worldwide programming increased after the implementation of the above outlined managerial turn, but

it matched an increase in productivity, along with the performances of new productions (see Figure 3, above).

Conformity, indeed, has to do with something, in relation to something else, in some aspects.

So, is it a matter of opera titles or of productions? Opera performances are not museal exhibitions, so a repertoire program does not provide evidence on the originality or on the conformity of what is performed, displayed on the stage.[67]

Trevisan provides the following definition of artistic innovation, that is interpretation of existing works, quoting the director of the production department at La Fenice: <<"We live in a world that lies at the borders of archeology. Almost all the repertoire is made of works of the 19th century. When in 1904 Puccini presented Madama Butterfly, the audience didn't know what it was going to see. They could applaud or hiss; understand or not. Today we work with operas that in 90% of the cases people know, and they are part of our cultural heritage. In this situation we are called to understand if there is something that we can innovate in the interpretation, to make the opera suitable for our times. In this sector, innovation cannot be anything else than this.">>.[68]

Trevisan argues that artistic innovation shall involve the three facets that characterize operas, that is dramatic, musical and visual contents.

This is clearly the case of new works. For existing titles, provided that you cannot innovate the dramatic text (the libretto) and the musical sheet of an existing opera, innovation for example is not only up to directors and designers of stage, of costumes, of lights, but also up to orchestra conductors that can opt for tempo or accents, as a musician states:<< "it is like reading a poetry, the words are the same, but you can read it in several ways. The conductor gives you his idea of how to read the music. You must interpret what you read!">>[69]

As far as artistic innovation is concerned, Trevisan's line of reasoning destination cannot be avoided: << the value of an artistic innovation is inevitably subjective, based on each one own experience, knowledge, and sensibility, and I am not here trying to overcome this fact.>>[70]

As far as managerial innovation is concerned, with a view to repertoire programming, Trevisan claims that La Fenice's new semi-repertory programming strategy proved to be successful, in terms of innovations as far as audience reach, value creation and business management and governance are concerned, though such achievements are often believed to be damaging the artistic quality: given the rules of the field, opera houses

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[67] Trevisan, P. (2016), p.117-118.

[68] Idem, p.118.

[69] Idem, p.120-122.

[70] Idem, p.123.

as institutionalized organizations tend to represent as like each other (I ask: isomorphism by imitation?), transforming themselves as the rules change in order to achieve new legitimacy. In an opera house, the organizational aspects of rehearsal rooms are not the ones of the offices, and it is in the offices that managerial improvements can be and are measured, therefore opera houses are <<required to be innovative managerially, rather than artistically, in order to gain the legitimacy and thus to guarantee their survival.>>[71]

But Trevisan argues that both artistic innovation as interpretative and conformity of repertoires are somehow due to managerial innovation: conformity of repertoires is preferred not only because of more predictable costs, less commercial riskiness and the believed non-obsolescence of cultural products, but also because, as a matter of fact, performers and managers share common interests, against composers and *librettisti*, the so called creators. Performers are concerned with the skillfulness of the interpretation and they would deserve less attention with new operas by recognizable composers and *librettisti*.[72]

Trevisan may conclude that, if conformity of repertoire programming is understood as lack of innovation, one misunderstands both the impact of managing the arts management and the meaning of artistic innovation in the opera field: <<conformity is not the lack of artistic innovation: it is the essence of managerial innovation… We face a paradox in which the traditional managerial approach [the season one, editor's note] was artistically innovative, while, under a managerial perspective, replication is innovative. We can call this paradox – replication is innovation – with the oxymoron "conservative innovation"… nowadays artistic innovation is "different" – and not minor or lesser – than in the 19th century.>>[73]

Let me state anew, Gabriel Tarde (1843-1904), according to Filippo Domenicali, the Italian translator of Tarde's works, can be considered as precursor to a philosophy of difference and repetition,[74] where difference constitutes, at the same time, the origin and the destination of repetition, which is on the one hand differential, that is making a distinction, constituting a difference, functioning/ proceeding differently, and on the other hand differentiating, that is discriminating, showing a difference.

Trevisan acknowledges that <<The concept of success is formulated in accordance to the shared beliefs and norms that dominate the social order in a given time and space. These beliefs and norms define what is considered successful and what it is not.>>[75]

Gabriel Tarde, by the way, deals with desires and beliefs.

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[71] Trevisan, P. (2016), p.125-127.

[72] Idem, p. 128.

[73] Idem, p.129-130.

[74] Domenicali, F. (2016), *«Je rêve de faire un an un cours sur Tarde…». Note sopra un corso immaginato da Gilles Deleuze*. Esercizi Filosofici vol. 11, n. 1. EUT Edizioni Università di Trieste, p.16-30. At http://hdl.handle.net/10077/13044 .

[75] Trevisan, P. (2016), p.132.

1.3.4 Artification of businesses and managerialization of the arts

As far as the functionality of management discourses for the capitalist ideology is concerned, Trevisan's final considerations point out, along with the social critique that addresses poverty and inequality as entailments of capitalism, the artistic critique that directs its attention to the depauperization of meanings, autonomy and creativity of people, subjected to market and wage-labour.

Thus, management discourses appear to provide justifications to the emergent capitalistic order by mentioning ideas relevant to the "creative industry" and to the "creative class", with the concept of creativity taking the place step-by-step of innovation.[76]

The boss, according to a hierarchy, is replaced by the leader with shamanic powers of vision;

with a view to projects, employees team-up and self-control themselves by means of wrought-iron motivation and binding promises, in enjoyable working places, thus achieving both employability and life goals.

Arts management becomes interesting in management studies, Trevisan recalls, because naturally dealing with creative personnel and creative processes.

Please, let me quote again:<< Some studies have very evoking titles containing art-business metaphors, such as the books "Jamming: art and discipline in business creativity" by John Kao … on the similarities between jazz and management, and "artful making: what managers need to know about how artists work" by Austin and Devin (2003) on the parallelism between knowledge management and theatrical plays direction; or the paper "managing musically: how acoustic space informs management practice", by Bathurst and Williams (2013).>>[77]

About John Kao, please consider the World Economic Forum site that states: << Dubbed "Mr. Creativity" and a "Serial Innovator" by The Economist, John is a thought leader, practitioner and activist, who has played a leading role in the fields of innovation and business creativity for over 30 years. He blends the perspectives of former Harvard Business School professor, best-selling author, serial entrepreneur, musician, master facilitator, Harvard-trained psychiatrist, and Tony-nominated producer of film and stage. John's work reflects an ongoing engagement with advanced, disruptive technologies. His advisory and venture development activity has embraced fields as diverse as innovation learning, blockchain credentialing for education, AI and big data models for microbiome research and ocean surveillance, data ownership and privacy, immersive gaming, collaboration technology and more. John received BA and MD degrees from Yale University and an

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[76] Trevisan, P. (2016), p.133-136.

[77] Idem, p.137.

MBA from Harvard Business School. He is a fellow of the Royal Society of Art and Yamaha's first "innovation artist." In the summer of 1969, he apprenticed to rock legend Frank Zappa.>>[78]

The "artification"[79] of businesses, the taking into account of the specific facets of the arts sector in the managerial discourse related to the creative industry, lead to questions of economic growth, occupation, social ends overcoming the possible, traditional conflict between art and commerce:<< Organizations operating under different rationalities (art, market, public sector) and with different structures (non-profit and profit oriented), are unified under the same label, and the distinctiveness of arts organization is lost in the big mixed group.>>[80]

Artification of businesses and managerialization of the arts could make it happen: saving arts, <<Management, in this context, looks like the "prince charming" that could save the "sleeping beauty" from the threat of financial ruin>>, Trevisan remarks.[81]

So called artification and managerialization discourses, rational discourses and artistic, passionate, creative discourses share a fundamental, inextricable discoursiveness, rhetorical, that is verbal, relating to or consisting of words, practice, that is involving action, actual performance, application.

I ask: is there anyone who can avoid the engagement in any form of discourse?

It is a matter of framing, the first step in decision-making.

Everybody is embedded in the frame of language, enclosed closely in the language, as if in a matrix of ideas, that is a narration as anticipated above, be it the language English, mathematics, econometrics, words or numbers: nobody can slip away from the possible need of interpretation.

It is about time to thank Paola Trevisan and move on towards Tarde's so-called contagiontology.[82]

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[78] https://www.weforum.org/people/john-kao

[79] Naukkarinen, O. and Saito Y., eds. *Artification*. Contemporary Aesthetics, Special Volume 4 (2012). At https://contempaesthetics.org/newvolume/pages/journal.php?volume=49

[80] Trevisan, P. (2016), p.139.

[81] Idem, p.140.

[82] Kullenberg, C. and Palmås, K. (2009). *Contagiontology*. Article at https://www.eurozine.com/contagiontology/ .

1.4 In a beginning: on a contagiontology

1.4.1 On tradition as transmission

According to Facioni's text on the seizure of the origin,[83] also the idea of "origin" and of original are to be considered <<as a result, an heritage, an "inheritance" of the idea of "tradition" and not vice versa.>>[84]

The transmission of a tradition, for example the operatic one, deals with the future.

There is a facet of such future, let us name it its "not yet" that exceeds the constraints of anticipation or of awaiting.

It would otherwise be a permanent present made future.

In order to be promising, the transmission of a tradition, its future, shall both call upon memory and call off it.

The paradigm of hermeneutics, of the possibility of interpreting, is the renewal of sense, an act or process of renewing, a repetition, recurring again and again, for an additional time, anew, in a differing, distinct, unlike form or characteristics.

The "not-yet" of the possible interpretation deploys inexhaustible, unlimited, limitless performing of operas that overturns the sequence "original (first time) performance – representation".

It is a matter of fact that opera repertoires show different traditions as far as nationality, artistic movement and genre are concerned, because of a history of more than four hundred years of representations, since the birth of opera as a Renaissance artistic product in Italy.

Opera blends <<vocal and orchestral music, drama, visual arts and dance… In Florence, a small group of artists, statesmen, writers and musicians, known as the Florentine Camerata, decided to recreate the storytelling of Greek drama through music. Enter Jacopo Peri (1561–1633), who composed Dafne (1597), which many consider to be the first opera.>>[85]

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[83] Facioni, S. (2005).

[84] Idem, p.132.

[85] A Brief History of Opera at https://sfopera.com/discover-opera/intro-to-opera/a-brief-history-of-opera/ .

1.4.2 Tarde's "contagiontology" of difference and repetition

Following Domenicali's line of reasoning,[86] if difference may appear between two repetitions, that is instances of repeating or being repeated, it is also true that the repetition is differentiating the difference.

The repetition as a process shows two orders of difference, as origin and as destination, always a variation.[87]

The similarity, the affinity, the likeness of collective representations of millions of human beings should not be taken for granted: they are not to be assumed.

According to Tarde, they are precisely what is to be given the reason for or cause of, what is to be explained, to be unfold.[88]

The flow of belief and desire that propagates via imitation, moves in accordance to a law, *ab interioribus ad exteriora*, from a state of belief or desire to another state of belief or desire, understood by the representations and presupposed by them.[89]

What is the interior of a paradigm, that is an example to be imitated? «What is invented o imitated it is always an idea or a will, a judgement or a pattern, in which is expressed a definite dose of belief and desire>>.[90]

Tarde's laws of imitation and invention, along with his social logic, deserve attention also within evolutionary theories of innovation.

According to Djellai and Gallouj,[91] following Tarde's line of reasoning, <<After all, it is knowledge of resemblances and repetitions that makes it possible to count and measure phenomena. Thus, for example, in order to establish a cause-and-effect relationship between events, that relationship has to be repeated or repeatable. Repetition may take particular forms, one of which is growth or increase (increase in the number of followers of a religion, in the number of cells in a growing body, etc.).>>[92]

In a society of individuals imitating or counter-imitating each other, <<belief and desire are the two basic social and psychological factors that form the substance of invention and imitation. Societies are organised around converging or competing beliefs. Similarly, they function on the basis of converging or competing desires. In other words, social progress, whatever it may be (like individual progress, incidentally), is driven by two mechanisms: 1) the substitution of one discovery or invention (that is of

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[86] Domenicali, F. (2016), my translation.

[87] Idem, p.18.

[88] Idem, p.21.

[89] Idem, p.23.

[90] Tarde, G. (1890). *Le leggi dell'imitazione*, ed. Domenicali F. Torino: Rosenberg & Sellier, p. 167, my translation.

[91] Djellai, F., and Gallouj, F. (2014). The laws of imitation and invention: Gabriel Tarde and the evolutionary economics of innovation. Revue Economique. <halshs-00960607>.

[92] Idem, p.3.

a need or a belief) by another… 2) accumulation, that is the addition of one invention or discovery (that is of a need or belief) to another. This process of mutual reinforcement is described by Tarde as a logical union or pairing (or even combination).>>[93]

How to differentiate imitation from invention, that is innovation?

Quoting Tarde, invention is << "the product of a singular conjunction of heterogeneous imitations in an individual's brain, (…) anything that opens *new outlets* to the different rays of imitation tends to increase the chances of similar singularities">>.[94]

Thus the novelty criterion does not need radicality but has combinatory nature of previously existing elements.

Let us recall what already stated above, as for the origin of opera: <<In Florence, a small group of artists, statesmen, writers and musicians known as the Florentine Camerata decided to recreate the storytelling of Greek drama through music. Enter Jacopo Peri (1561–1633), who composed Dafne (1597), which many consider to be the first opera.>>[95]

As for the tension artistic-managerial innovation above outlined, with Tarde <<invention and cooperation are synonymous, since inventions are jointly produced. 'The essence of an invention is that it makes it possible to combine resources that previously seemed alien or in opposition to each other; it brings together forces that were previously opposed or in sterile juxtaposition to each other.'>>[96]

As Djellai and Gallouj recall, << Tarde raises a question that still today lies at the heart of contemporary evolutionary theory: is innovation a factor leading to convergence ('universal uniformisation') or divergence? Although imitation leads to gradual similarity among individuals, in Tarde's view it does not, for all that, stifle their originality; on the contrary, it encourages it, because there is not a single model to be imitated but rather an infinite number thereof. This infinite combination is a source of both originality and divergence.>>[97]

The spreading of the different rays of imitation, the repetition at work, entails inventiveness, realizing differentiation, variation, innovation.

Kullenberg and Palmås wrote about a "contagiontology" in 2009, stating that Tarde's <<contagion-centric thought…argued in favour of an epidemiological conception of society>>, highlighting a then emergent

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[93] Idem, p.6.

[94] Idem, p.8.

[95] A Brief History of Opera at https://sfopera.com/discover-opera/intro-to-opera/a-brief-history-of-opera/ .

[96] Djellai, F., and Gallouj, F. (2014), p.21.

[97] Idem, p.28.

surveillant "panspectrocism" that used <<pattern recognition and computer-assisted predictions of future behaviours.>>[98]

According to Kullenberg and Palmås, Tarde deemed that sciences look for what he named the "universal repetition", each repetition existing as potential variation:<< No repetition is ever fully identical with the "original", but is always a displacement and a variation.>>[99]

This is in line with the meanings of innovation and conformity above articulated, but in my understanding, underlines the imitative flow.

Kullenberg and Palmås state that <<Tarde explains this with the concept of imitative rays, meaning that any specific innovation – for example the pronunciation of a word or behavioural patterns for standing in line – may radiate and create resonances by being repeated by many humans or other species, over and over again. Social change and innovation thus always has a point of departure, but may only form a general plane of consistency by being repeated.>>[100]

Among many others, a mode of competition is constantly affecting repetitions.

It assembles variously, for example in organizations, institutions, markets, homes, opera houses.

Kullenberg and Palmås point out that <<Tarde stresses the potentially contagious resonances inherent to imitations: "but we do have epidemics of luxury, of lotteries, of stock-speculation, of gigantic railroad undertakings, as well as epidemics of Hegelianism, Darwinism etc.">>,[101] and of La Traviata, I would add.

The "contagionontological" perspective bears light on the social diagramming practice of "panspectrocism", being the process of contagion constructed as a knowable and controllable tool, not only << to *stop* and *contain* contagions…[but also with, ed. note] the twin aims of *injecting* and *monitoring/predicting* contagions… The panspectric diagram assumes that your future behaviour can be predicted through the examination of the imitative rays that you are exposed to. >>[102]

I ask: is not an audience exposed to the imitative rays of opera revivals?

Google, today Alphabet Inc., analyzes the content that is more searched by users, by means of tools that control a big part of user's experience, because << the company wants to know what you'll want to do tomorrow.>>[103]

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[98] Kullenberg, C. and Palmås, K. (2009). *Contagiontology*. Article at https://www.eurozine.com/contagiontology/ .

[99] Kullenberg, C. and Palmås, K. (2009).

[100] Ibidem.

[101] Ibidem.

[102] Ibidem.

[103] Ibidem.

Kullenberg and Palmås point out that Andrew Barry and Nigel Thrift in 2007, in their article titled "Gabriel Tarde: Imitation, Invention and Economy,"[104] noted the implementation by big corporations of Tarde's perspective, <<tracking and periodically initiating consumer enthusiasms>>,[105] as, I would add, try opera houses with the tracking and initiation of audience enthusiasm.

Is there something viral and contagious in opera repertoire programming?

Instead of ascribing, for example, the La Traviata revivals to a defined managerial turn that fosters a new sense of artistic innovation, can we trace the contagion of the performances of certain opera titles?

1.4.3 On contagions beyond biology

Tony D. Sampson, reader in digital media cultures and communication at the University of East London, UK., in a 2011 article titled "Contagion Theory Beyond the Microbe",[106] addresses the emergence of an epidemiological social paradigm, pointing <<toward new universal models of contagious social influence and infectable consumer mood.>>[107]

Could a repertoire program be a non-human microbe possibly affecting an audience?

Or could a repertoire program be a <<"social form" composed of emotional vectors and affective contagious encounters>>[108]?

Tarde's laws of imitation evoke a mimetic unconscious and the discovery of "mirror neurons" provides scientific explanation about it, since <<'mirror neurons' generate automatic and unconscious reflexes that lead us to unconsciously mirror other people.>>[109]

Within a project funded by the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme, in his "The mimetic unconscious: a mirror for genealogical reflections", Nidesh Lawtoo recalls that for Nietzsche <<the unconscious and imitation are two sides of the same coin. And this Janus-faced coin flips our common understanding of what is both mimetic and unconscious upside down. On one side, imitation, in its most basic, physio-psychological manifestations, is not based on a conscious,

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[104] Barry, A. & Thrift, N., *Gabriel Tarde: Imitation, Invention and Economy*, in Economy & Society, 4/2007.

[105] Barry and Thrift (2007), p. 519.

[106] Sampson, T. D. (2011). *Contagion Theory Beyond the Microbe*. CTHEORY Special Issue: In The Name of Security. At http://ctheory.net/ctheory_wp/contagion-theory-beyond-the-microbe/ .

[107] Ibidem.

[108] Ibidem.

[109] Lawtoo, N. *The mimetic unconscious: a mirror for genealogical reflections*, Borch, C. ed.. In *Imitation, Contagion, Suggestion: On Mimesis and Society,*. London: Routlege (2019), p.37–53. Online chapter available at:
https://limo.libis.be/primoexplore/fulldisplay?docid=LIRIAS2346235&context=L&vid=Lirias&search_scope=Lirias&tab=default_tab&lang=en_US&fromSitemap=1

volitional action that stems from the ego but on an unconscious reflex reaction triggered by the other, especially exemplary others.

On the other side, this unconscious is not based on a repressive or linguistic hypothesis to be discovered within a singular subject but on a mimetic hypothesis that is attentive to affects that flow in-between subjects engaged in a relation of inter-cerebral communication – what Gabriel Tarde will call the 'fundamental problem' (2001: 263) of the social.>>[110]

The mirror neurons discovered by Giacomo Rizzolatti in the mid-1990s, according to neuroscientist, <<generate 'an effortless, automatic, and unconscious inner mirroring'… an 'unconscious mimesis' endowed with a 'pre-social character'>>.[111]

With Lawtoo, let us quote Tarde:<<'in the nervous system there is an innate tendency to imitate'…'nerve imitates nerve; brain imitates brain'…'we are not born similar; we become so'…'to have only suggested ideas and to believe them spontaneous: this is the illusion characteristic of the somnambulist and of the social man'>>.[112]

Neuroscientists, recalls Lawtoo, are re-discovering <<that a 'mirror mechanism [...] permits our brain to immediately understand what we are seeing, feeling, or imagining others to be doing'>>, and mimesis results as <<the *medium* of affective contagion.>> [113]

According to Sergio Tonkonoff, researcher in philosophy of social science, Tarde argued for <<'heterogeneity, not homogeneity…at the heart of things'… 'the organization of imitativeness'…Moreover, invention does not mean rootless creation, but instead co-adaptation or composition of a pre-existing series of examples... combination of pre-existing premises that introduces new differences (new beliefs and desires)>>.[114]

So, <<a beginning is always located *in media[s] res*, for an invention adapts imitative rays previously acting in the social field, generating an unprecedented conjunction, and giving rise to a new start. Here, both constitution and destitution of any 'social fact' depend on the communication of collective beliefs and desires; and such a communication always has a singular irradiation point. Even when a way of acting, thinking, or

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[110] Idem, online p.7.

[111] Idem, p.8.

[112] Idem, p.10,11,13.

[113] Lawtoo, N. (2019), online version, p.17,21.

[114] Tonkonoff, S. (2013) A new social physic: The sociology of Gabriel Tarde and its legacy, article in Current Sociology, 61 (3), SAGE, p.267-282. Available at

https://www.researchgate.net/publication/258131418_A_new_social_physic_The_sociology_of_Gabriel_Tarde_and_its_legacy, p.270-271.

valuing might institutionalize or collectivize itself in a seemingly impersonal manner, there is an individual, or rather a particular type of individuation, in its origins and successive transformations.>>[115]

With a view to a polygenesis in a multiplicity of instances, Tarde is against the hypostatizing, the reifying of notions, such as management, economics, arts, to be overcome by means of << reconstructing the specific processes of emergency and dissemination that those notions only capture in their results…These abstract terms don't allow us to see what has actually happened. They tend to hide the precise inventions, imitations, and oppositions, after which an example becomes anonymous, repeating itself as if it had no origin, or as if this were indefinite.>>[116]

Tonkonoff points out the need for a cartographic form of knowledge, an activity following Tarde's method: << to characterize any social system we have to identify the specific manner in which its elements have been articulated or disposed. We also have to measure the coherence of each disposition and the degrees of cohesion that connect its different parts to each other. In addition, we must describe its internal morphology, the direction of its flows, its degrees of intensity (rises and drops), the positive or negative nature of its charges, as well as the inputs and outputs (regular or irregular) that nourish its economy, and its relations with other ensembles.>>[117]

Immanent and contingent relations for an assembling that <<never totalizes the elements that compose it. In this sociology, the whole is always smaller than the sum of its parts. Here, each part establishes a fragmentary or partial bond with the other elements, to form the unit they always exceed. On the other hand, each part can participate in different ensembles at the same time, as well as avoid all of them… There are no exhaustive and exclusive relations in the Tardean social world…not only does such an ensemble or system not totalize its components but neither can it be entirely complete or absolutely coherent… the concepts of society and the individual can still be legitimate notions of sociological discourse if they are understood as open ensembles of immanent, contingent, and partial relationships of beliefs and desires in continuous change, and if their constitution is understood as an event itself.>>[118]

Tonkonoff, by way of conclusion, pinpoints that << One remarkable value of Tarde's work is that it can help us to prevent the (modern) societalist hypostasis as much as the (postmodern) aporias of dissemination… Even when Tarde considers the plurality of the social field as an irreducible theoretical beginning – and as an equally irreducible ethico-political end – he is always concerned with the ways in which social unities and systems are composed.>>.[119]

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[115] Idem, p.274.

[116] Ibidem.

[117] Tonkonoff, S. (2013), p.275.

[118] Idem, p.275-276.

[119] Idem, p.279.

Taking into consideration that the coming to foreground of the social influence as something determined by shared feelings puts into question the underlining <<mechanistic interpretations of what spreads>>,[120] Sampson deals with <<a "diagrammatic" problem at the center of contagion theory which can be interestingly re-approached via Tarde's insights into economic crisis and celebrity culture…Tarde forwarded an epidemiological diagram which arguably provides a much clearer understanding of social relation outside of the reductive limitations of organic social category, and at the same time probes between the artifice that divides biological and psychological phenomena from social theory.>>[121]

1.5 On the diagramming of a contagion theory

1.5.1 The spreading of affects

Following Sampson's line of reasoning,[122] the contagiousness of a virus elicits feelings about becoming infected, namely fear and anxiety against what spreads, that make the waging of a war against an invasion supersede the biological, medical relevant discourses.

As for the transmission of such feelings, << It would seem that the emotional openness to repetitive and ever converging transmissions of statements of this kind exceed mere ideological productions of myth... Indeed, would not belief (and how it can spread) need to be reconsidered, *ahead of ideas..*?>>[123]

Rethinking the relation between culture and nature and taking into account that ideas are heralded by affective encounters and contagious qualities of what spreads, Sampson recalls <<Tarde's late nineteenth-century social contagion theory which similarly locates the human condition somewhere in between deliberate volition, biologically motivated mechanical habits and the self-spreading of desires and social invention.>>[124]

For the purposes of this thesis, it is interesting to consider that, if the most efficacious and efficient contagion of all is resulting from our feelings about what is transmitted, a different interpretation of both the "artified management" and the managerialized art, entailing the spreading of La Traviata revivals, could be forwarded.

What actually is contagious, what spreads, is the affective result of La Traviata performances as contaminating encounters, contaminators, in the affective atmosphere in which we live.

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[120] Sampson, T. D. (2011).

[121] Ibidem.

[122] Sampson, T.D. (2011).

[123] Ibidem.

[124] Ibidem.

Exceeding the managerial and artistic realms of effect, La Traviata's love contagion appears to be responsive of both the *love of difference* and the *love of the same*,[125] thus their representations are encounters that trigger <<empathic contagions that spread through adaptive atmospheres of affect and imitative entrainment.>>[126]

Cognitive neuroscience deals with the affective priming of experience and, << Accordingly, what spreads is understood to pass unconsciously through the skin into the viscerality of human experience, guiding automatic behavior, before it moves upstream to the conscious reflective mind and sense of volition.>>[127]

Tarde, in 1890, wrote about somnambulism, sleepwalking, enslavement to imitation, increasingly personal and rational.

The valence of virality is also positive: in the affective atmosphere, hacking (manipolare) beliefs and desires, in which Tarde's social somnambulists live, somnabulists desire to love and to be loved.

So, I follow Sampson, following Tarde:<<Social obedience is partially guided then by "unheard-of expenditures of love and of unsatisfied love at that."… Significantly, these investments in love… [e..g. made by opera houses, let me introduce it as an editor note] satisfy a "persistent need of loving and admiring," requiring the raising up of "new idols… from time to time.">>[128]

Social encounters, such as opera performances, are blended with biological adaptation via interstices between the sociological and the biological realm.

These interstices overcome the constraints of determinism.

What spreads are not units of imitation, e.g. memes or genes as self-serving codes.

The inseparability of social, psychological, biological and neurological is the specific facet of Tarde's social epidemiology, beyond deterministic thinking of mechanisms.

The social emergence of La Traviata revivals in <<Tarde's society of imitation does not fall back on collective or individual representations. It is not at all about pure association as it concerns the disassociated connectivity (unconscious association) of a social somnambulist. Like this, Tarde's social becomes an assemblage of relationality composed of self-spreading and mesmeric imitative waves or flows… the "coherent" outcome of "desires that have been excited or sharpened by certain [social] inventions," which imitatively radiate outward, point-to-point, assembling what appear to be the logical arrangements of social form…What radiates outwards are neither social facts nor collective representations, but the microrelations of shared passions, thoughts,

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[125] Michael Hardt, *Love as a Political Concept*, a lecture for the European Graduate School, 2007. http://www.youtube.com/watch?v=ioopkoppabI

[126] Sampson, T.D. (2011).

[127] Ibidem.

[128] Ibidem.

conversations, beliefs, feelings and affects which pass through porous self/other relations in all manner of contagious environments, including corporate, economic [e..g. opera houses, let me introduce it as an editor note] and political arenas.>>[129]

1.5.2 Visualizing beyond representation

For a contagion theory in a Tardean space, what diagramming is possible?

It is needed a diagramming that does not only take into account temporality properly but also << that exceeds a mere network of relations (technical or otherwise) and points instead toward a far more complex array of events and contagious assemblages of desire and social invention.>>[130]

Sampson, following Tarde, points out an approach that considers a specific ability of affective events, making a distinction between the periodically linked contagious desire, related to survival, and the non-periodic one, bubble building, <<for things like fashion and fame that organic life seems to passionately aspire toward, and imitate, mostly unaware of the mesmeric and magnetic attraction they generate… [a] jump from the respect of the few to the emotionally charged adulation of the many…is explicitly linked by Tarde to the spontaneity of encounter with complex "currents of imitation.">>[131]

An infectable desiring audience is indeed required for an epidemic of La Traviata's influence, in order to let opera houses express their <<capacity for increasingly mediated encounters of imitation-suggestibility to be "consciously and carefully steered.">>[132]

Opera houses' chief executives, artistic directors, marketing and communication directors, directors of production, concur to realize an efficacious and effective contagion.

A spontaneous event, such as the appreciation of a La Traviata performance, <<can be captured, measured, primed and organized, even made to look like an accident or chance encounter, so as to dip below conscious awareness and become more readily absorbed into the neurological unconsciousness.>>[133]

In his Laws of Imitation, Tarde states:<< Nothing… is less scientific than the establishment of this absolute separation, of this abrupt break, between the voluntary and the involuntary, between the conscious and unconscious. Do we not pass by insensible degrees from deliberate volition to almost mechanical habit?>>[134]

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[129] Sampson, T.D. (2011).

[130] Ibidem.

[131] Ibidem.

[132] Ibidem.

[133] Ibidem.

[134] Tarde, G. (1890), p.37, Sampson's translation.

A final remark by Sampson, given the affective atmospheres and the possible contagion of mood, is dedicated to the possible resistance to imitation-suggestibility: how counter-contagion could be triggered? Tarde proposes non-imitation, distinct from counter-imitation, as a matter of pure antipathy, an assertion of antagonism of affects, of feelings.

Tarde indeed states: << In counter-imitating one another, that is to say, in doing or saying the exact opposite of what they observe being done or said, they are becoming more and more assimilated, just as much assimilated as if they did or said precisely what was being done or said around them… there is nothing more imitative than fighting against one's natural inclination to follow the current of these things, or than pretending to go against it.>>[135]

1.5.3. For a rationale of individual trajectories

For the purposes of this thesis, it is also the Bruno Latour's understanding of Tarde's contribution as far as the <<different definition of what it is for a discipline to be quantitative>>[136] is concerned, be it sociology, psychology or economics.

According to Latour, in Tarde's reasoning, the distance of natural sciences from their objects entails their original and permanent need for information, so that <<Resemblance is what appeals to the natural scientist. Individual differences can be safely neglected.>>[137]

In sociology, there is a proximity to the objects of study such that, for sociologists, their voluntary distancing from them would imply <<that they are attempting to grasp them in the same way that astronomers deal with stars or biologists with cells. And yet, if the latter must handle their subject matter from far away, it is not because it is especially "scientific" to do so. It is because they have no other way to reach their objects of investigation.>>[138]

Of course, taken into consideration that being scientific is to have enough information, the alternative between numbers to be crunched (elaborated) and qualities to be interpreted would therefore be a misunderstanding of the constitutive lack of information of some disciplines, that therefore, dealing with atoms or cells, strive for <<the makeshift approximation of a structural law, distinct from what its individual components do.>>[139]

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[135] Tarde, G. (1890), p.40-41, Sampson's translation.

[136] Latour, B. (2009). *Tarde's idea of quantification*. In *The Social After Gabriel Tarde: Debates and Assessments*, Candea, M. ed.. (2010) London: Routledge, pp. 145-162.

At http://www.bruno-latour.fr/sites/default/files/116-CANDEA-TARDE-FR.pdf .

[137] Idem, p.148.

[138] Ibidem.

[139] Idem, p.148-149.

To gather quantities, one does not need to distance oneself from the individual moving towards the structural.

My reading of Latour, reading Tarde, pinpoints: <<the very heart of social phenomena is quantifiable because individual monads are constantly evaluating one another in simultaneous attempts to expand and to stabilize their worlds. The notion of expansion is coded for him [Tarde] in the word "desire," and stabilization in the word "belief"…Each monad strives to possess one another…'The impersonal, collective character is thus the product rather than the producer of the infinitely numerous individual characters; it is their composite photograph, and must not be taken for their mask.'>>[140]

When we consider the aggregation of individual components, we do not get something more, we lose something of the individuals, because mixed together.

Following Latour's reading of Tarde, those who program an opera repertoire imitate one another, <<They have to learn from one another, modus operandi per modus operandi, …trick by trick. By assembling file after file…they end up producing>>[141] folders as evidence of La Traviata revivals, as the emergence of a virtuous circularity in arts management.

<<Following the "imitative rays" will render the social traceable from beginning to end without limiting us to the individual, or forcing a leap up to the level of a structure.>>[142]

In order to avoid the above outlined misunderstanding of structure entailed by the distancing from the objects of study, Tarde referred to the notion of imitation, doing << for social theory what Pasteur had done in epidemiology: in the same way as bacteriology allows one to move from a regional theory of miasmas to a point-to-point and person-to-person theory of contagion through a specific vector (cholera bacillus, Koch' bacillus, etc.), Tarde moves from an aggregated cloud of collective qualities to a highly specific point to point, person to person "contagion" of ideas, each of them having its own peculiar effectivity.>>[143]

With imitation, << the "epidemiology of ideas"… he [Tarde] could render the social sciences scientific enough by following individual traits, yet without them getting confused when they aggregated to form seemingly "impersonal" models and transcendent structures. The term "imitation" may be replaced by many others (for instance, monad, actor-network or entelechy), provided these have the equivalent role: of tracing the ways in which individual monads conspire with one another without ever producing a structure.>>[144]

In my understanding, the "artification" of management and the managerialization of arts are neither impersonal nor transcendent models of structure.

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[140] Idem, p.150.

[141] Latour, B. (2009), p.151.

[142] Ibidem.

[143] Idem, p.163.

[144] Idem, p.151.

An opera house is <<not a "collective self" [that] emerges *ex abrupto* from "its astonished associates.">>[145]

Opera houses emerge because associates like chief executives, artistic directors, marketing and communication directors, directors of production, as well as directors, conductors, singers, musicians, scenographers, technicians and the audience, find a way of conspiring with one another, concur to realize an efficacious and effective contagion, such as La Traviata revivals.

Latour states that the search requirement is to <<be able to see with clarity, the difference between "individualizing a group" and "being an individual in a collective structure." Each case requires a completely different feel for the complex ecology of the situation. If this requirement strikes you as less demanding, less empirically exacting, less "scientific" than the search for a structure, then it means that you will have abandoned, in effect, the search for quantification, for the real *quanta* that lie at the heart of each monad.>>[146]

Latour recalls that Tarde was accused to be more a literate than a scientist, but he actually argued that << if it is wrong to consider individual variations as though they were deviations from a law, it is equally wrong to consider individual variations as the only rich phenomenon to be studied by opposition with (or distance from) statistical results. It is in the nature of the individual agent to imitate others. What we observe either in individual variations or in aggregates are just two detectable moments along a trajectory drawn by the observer who is following the fate of any given "imitative ray."… It is the trajectory of what circulates that counts, not any of its provisional steps.>>[147]

Let me read Latour and interpolate again: << The importance of trajectory is the most clear with intellectual arguments,…consensus formation and paradigm entrenchments…deeply modify how individuals find their way in an argument. …[in opera houses, such as La Fenice, editor note] for each of the issue at hand, each individual converts to the consensus each for his or her peculiar reason. Later, they may once again re-differentiate themselves from any established dogma.>>[148]

It is difficult to follow the traces of a trajectory moving <<from each individual innovation, up to the aggregate, and then back again to the individual resistance that can develop in response to a given paradigm>>,[149] but, in my understanding, the account provided by Trevisan, for instance, shows some hints of the managerial turn at La Fenice as an imitative ray.

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[145] Idem, p.152.

[146] Latour, B. (2009), p.152.

[147] Idem, p.153.

[148] Ibidem.

[149] Ibidem.

Tarde is well aware of the wide difference, in character or attitude, between the everyday case-by-case (the individual behaviour) and the rules, which appear to be summaries and guides alongside with actual cases and an abundance of earlier occurrences of something similar.

The reproductive success of, for example, La Traviata revivals in a managerial turn, should not be considered in terms of the individual variation to a law but it should be understood in terms of the opera individual contribution to the reproductive success.

Tarde argues for monads: <<The individual element is a monad, that is, a representation, a reflection, or an interiorization of a whole set of other elements borrowed from the world around it.>> [150]

For Tarde it is neither a matter of individualism nor of atomism. A wholeness is formerly existing in every individual, as a monad and therefore not as an atom.

Latour considers that <<When any actor is found to be hesitating it is not because they are an atom taken in different fields of forces pressing on them from the outside. An actor hesitates as a monad which has already gathered within itself vast numbers of other elements to which it offers the stage for an indefinite number of logical duels to take place.>>[151]

The powerlessness of monads by themselves drives their aggregation, and Latour states that << the "one" piggy backs on top of the "many" but without composing a "they." This is where Tarde's originality resides: everything is individual and yet there is no individual in the etymological sense of that which cannot be further divided. This loss is a paradox, but only for those who would begin by opposing the structure and the elements… Tarde devises his notions of "desire," "belief," and "possession" very early on to code those relationships of interpenetration and competition from which all quantification resides in the end. >>[152]

There is no whole to be abstracted by its supposedly concrete instances and, let me read Latour and interpolate again, <<any quantification deployed by various statistical or metrological instruments will have huge influence on the way all monads [in a opera house] cohere and conspire.>>[153]

According to Latour reading of Tarde, in my understanding, for the purposes of this thesis, the scientific, rationale, managerial turn, be it the "artification" of management and/or the managerialization of arts, <<does not hang over the world from the outside. It has no privilege. This is precisely what makes science so immensely important: it performs the social together with all of the other actors, all of whom try to turn new instruments to their own benefits.>>[154]

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[150] Latour, B. (2009), p.156.

[151] Idem, p.156-157.

[152] Ibidem.

[153] Idem, p.158.

[154] Ibidem.

Latour concludes that Tarde attempted to maintain the traceability of individual contributions to aggregates, <<to direct attention towards the "imitative ray" in and of itself, in order to displace the individual element as well as the structural whole…The overarching advantage of this type of quantification is worth underscoring:… The insights in his work can assist us in abandoning the impossible task of reconciling an old social theory, born out of discontinuous data, with the research terrain we now have readily available, at a click of a mouse.>>[155]

Tarde's <<conceptual grammar>> entails the articulation of an open system of <<infinite social multiplicity-invention-imitation-opposition>>,[156] the vicissitudes of social life, in which also arts management, managerially and economically advised, is included.

A relevant mapping or a diagramming is wanted.

1.6 For a morphogenesis and a diagramming of opera repertoire programs

1.6.1 An epistemology of problems for an ontology of processes

Another interpretation of the works of Tarde is given by Gilles Deleuze.

In "Intensive Science and Virtual Philosophy"[157], Manuel De Landa, known as a philosopher of science, presents himself as an interpreter of Gilles Deleuze thinking, reconstructing Deleuze's arguments possibly without his jargon, so <<not straight, but Deleuze on the rocks>>.[158]

With a view to the openness and to the divergence of the world, where difference can be conceived not only as a lack of resemblance, but also as a driver of dynamic processes, where a mountain is still becoming a mountain, De Landa claims that an ontology of processes deserves an epistemology not only of facts and solutions, but also of problems.

For an epistemology of problems, it is necessary to stress the role of correctly posed problems, that is, more than a matter of the true solutions to those problems, a matter of framing.

A well posed problem and a well framed decision-making, captures an objective distribution of the singular, that is important, and of the ordinary, that is unimportant.[159]

[155] Latour, B. (2009), p.161.

[156] Tonkonoff, S. (2017). *From Tarde to Deleuze and Foucault: The Infinitesimal Revolution*. Palgrave Macmillan.

[157] De Landa, M. (2002). Intensive Science and Virtual Philosophy. London-New York: Continuum International Publishing.

[158] De Landa, M., 2011a. Deleuze, Morphogenesis, and Population Thinking. European Graduate School Video Lectures, since 2012/10/14 at https://www.youtube.com/watch?v=5HSMTUZ64bY .

[159] De Landa, M. (2002), p.5.

Everything has a form and a morphogenetic process is a process that generates form: morphogenesis is the birth of form, the creation of form, the origin of form, be it of a mountain or of an opera season's program.

For an ontology not anymore of essences but of dynamic morphogenetic processes, driven by immanent intensive differences, any potential similarities of process would recall some essentialism, that ascribes ultimate reality to embodied essences perceived by the senses.

Let us consider, then, multiplicities, manifolds, marked by diversity or variety.

It occurs to be needed a "space" for questions of process and, since the works by Friedrich Gauss (1777-1855) and by Bernhard Riemann (1826-1866), differential and integral calculus provided problem-solving resources in order to find, for curved lines or surfaces, the rate of change of their curvature at any given infinitesimally small point of the line or surface itself, <<*without any reference to a global embedding space* [italic in the text, editor note]>>.[160]

Not only a surface can be considered as a space itself, through its own local properties, but also manifolds, that is N-dimensional curved structures, can be studied.

Therefore, the new way of posing spatial problems deals with multiplicities that both addresses variable number of dimensions and shows <<the absence of a supplementary (higher) dimension imposing an extrinsic coordinatization, and hence *an extrinsically defined unity.* As Deleuze writes: 'Multiplicity must not designate a combination of the many and the one, but rather an organization belonging to the many as such, which has no need whatsoever of unity in order to form a system'>>,[161] echoing Tarde's line of reasoning, I would add.

A manifold, a multiplicity, becomes the space of possible states in accordance with the assessed relevant ways in which a process can change, its degrees of freedom, that are mapped as dimensions of the manifold.

After such a mapping operation, the state of a considered object becomes a point, a state-space, in the manifold at any given time, and we can diagram its changes of state, describing a trajectory, thus capturing a process.

<<As with any model, there is a trade-off here: we exchange the complexity of the objects changes of state for the complexity of the modelling space.>>[162]

This simplification allows the use of topology as for the analysis of some features of these spaces: Henri Poincaré (1854-1912) discovered features called singularities that influence the trajectories, the series of states of a process, that is the process itself.

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[160] Idem, p.11-12.

[161] Idem, p. 12-13.

[162] Idem, p.14.

Singularities may act as attractors, only approached asymptotically by trajectories, configuring basins of attraction that tend to attract the trajectories of processes to the same final state, as a destiny and a destination, i.e. the attractor itself, gaining a steady state, that can be also a closed loop, a cycle.[163]

So, in multiplicities we may find singularities, topological forms, recurrent topological features, showing that processes have similar long-term behaviour, not as a matter of essences, as ideal forms to which conform, but because of the topological nature of singularities.

Singularities, structuring state-spaces, defining multiplicities, appear to be recurrent independently of the physical mechanisms possibly considered, but they are not the essences of the considered processes because, in defining multiplicities, these <<are not given all at once but are structured in such a way that they *progressively specify the nature of a multiplicity* [italic in the text, editor note] as they unfold following recurrent sequences.>>[164]

In essentialist interpretations a mountain, though becoming a mountain, is a mountain. In a progressive differentiation of multiplicities, one finds the ever becoming mountain of a mountain.

Such progressive differentiation of multiplicities, moreover, is achieved through phase transitions, bifurcations, triggered by thresholds, critical values of intensive differences, that lead to new state-spaces for new destinies as destinations.

Multiplicities appear as <<*concrete universals* [italic in text, editors note]. That is, concrete sets of attractors (realized as tendencies in physical processes) linked together by bifurcations (realized as abrupt transitions in the tendencies of physical processes.>>[165]

<<Unlike the generality of essences>> and the resemblance involved in their instantiating, <<the universality of a multiplicity is typically *divergent*: the different realizations of a multiplicity bear no resemblance whatsoever to it and there is in principle no end to the set of potential divergent forms it may adopt.>>[166]

Multiplicities, indeed, give form to processes and not to their final product, that is, multiplicity can be realized by many processes that give very different results.

In accordance with a morphogenetic view, we should think of a continuum of multiplicities, meshed together, differentiating itself: <<a concrete physical process in which an undifferentiated *intensive space* (that is, a space defined by continuous intensive properties [that cannot be divided without involving a change])

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[163] De Landa, M. (2002), p.15.

[164] Idem, p.16.

[165] Idem, p.22.

[166] Ibidem.

progressively differentiates, eventually giving rise to *extensive structures* (discontinuous structures with definite metric properties).>>[167]

Multiplicities, as immanent to material processes, are articulated from certain features of state-spaces, pointing out the difference between the features as recurrent and the trajectories the features entail.

Attractors, though real because having definite effects on actual objects, lack of actuality.

So, it occurs to separate in such a modelling <<the part of the model which carries information about the actual world (trajectories as series of possible states) from that part which is, in principle, *never actualized* [italic in the text, editor's note].>> [168]

Here comes the reality of the virtual, i.e. structure not actualized.

Do state-space trajectories have the status of possibilities, thus becoming real, actual, from non-reality?

A possible open to become real is understood as having a resemblance to the real; the reality of what possibly became real is supposed to resemble the possible.

If the possible is somehow like the real and the real is somehow like the possible, what does existence add?

Out of the constraints of resemblance as a process and of identity as a principle, since actualization is differentiation, between the possible and the real, there is the way offered by accounting the genesis, the individuation process that links virtual multiplicities and actual structures; with Deleuze: <<"Actual terms never resemble the singularities they incarnate…For a potential or virtual object to be actualized is to create divergent lines which correspond to – without resembling – a virtual multiplicity.>>[169]

One shall deal with classificatory practices and reified categories such as resemblance and identity as results of dynamic processes, with analogy and opposition or contradiction by means of the accounting for their constitution, their establishment.

De Landa points out that, for a Deleuzian ontology, rejecting essentialism about, e.g. a specific sample of gold, would be to consider it not reducible to its atomic properties: e.g. that specific sample of gold has a history of individual atoms through processes of crystallization, so through structures, emerging not at once, with properties that are not those of the individual gold atoms.

I will now heavily make reference, transcribing my notes, to the lectures held in 2011 at the European Graduate School (EGS) by Manuel De Landa.[170]

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[167] De Landa, M. (2002), p.22.

[168] Idem, p.32.

[169] Idem, p.41.

[170] De Landa, M. (2011a). Deleuze, Morphogenesis, and Population Thinking. European Graduate School Video Lectures, since 2012/10/14 at https://www.youtube.com/watch?v=5HSMTUZ64bY .

Three different reasoning styles or explanatory strategies appear to come, according to Deleuze as interpreted by De Landa, from scientific, divergent fields and practices: population thinking, intensive thinking and topological thinking.

The first deals with actual things, the second with the processes that produce actual things, the third with virtual things, those that are real but not actual (e.g. consider a knife, that has the virtual ability, the tendency to cut, that actually cuts if you use it, but that can be actually not cutting, because not sharp enough to cut).[171]

1.6.2 Population thinking, intensive thinking and topological thinking

De Landa proposes the following general formula for population thinking:<<any population of variable replicators, coupled to any filter or sorting device, that allows some replicators to have more copies of themselves than others, gives an evolutionary process in which change can accumulate in a particular direction>>.[172]

As for replicators, e.g. De Landa recalls memes: the ethologist Richard Dawkins coined the neologism meme, in order to name a pattern of behaviour that is transmitted by imitation.

It occurs to distinguish between memes that are transmitted by imitation as a choice, e.g. the audience attendance at La Traviata performances, and those that are imitated by means of <<enforced obligation>>, e.g. the sounds from parents by an infant.[173]

In the above general formula of population thinking, the term variable, as qualifying replicators, addresses the need of heterogeneity in order to give evolution. Variation is not a matter of nuance, but the key in order to let the filtering among the replicators, variations as differences that matter in order to have one replicator more replicated than another.[174]

The variability is crucial for Deleuze, the philosopher of difference and repetition, i.e. the propagation of difference, after Tarde.

As for the term population in the general formula of population thinking, it addresses the need of a reproductive community, whose size is above a threshold of viability, in order to give evolution a chance.[175]

De Landa, M. (2011b). Intensive and Topological Thinking. European Graduate School Video Lectures, since 2012/10/17 at https://www.youtube.com/watch?v=0wW2l-nBIDg .

[171] Idem.

[172] Idem.

[173] Idem.

[174] De Landa, M., 2011a.

[175] Idem.

Population thinking needs multiplicity.

As for the filter, any selection pressure, biasing the process one way or another, is involved in permitting evolution. Of course, different selection pressures can obstacle each other, somehow compromising, thus not optimizing, evolution.[176]

Last, but not least, in population thinking, in bringing difference at the foreground, it occurs that change always happens in a particular direction, territorializes, localizes itself.

A second reasoning style, intensive thinking, is about the <<intensive differences that drive processes, productive differences that exhibit critical thresholds thus triggering events>>.[177]

Intensive differences store what fuels, energizes processes.

A full battery embodies, a "body without organs", an intensive difference.

Processes replace essences in the Deleuzian ontology, <<a universe of becoming without being where individual beings do exist but only as the outcome of becoming>>,[178] so what energizes processes does matter indeed.

The critical points of intensity may determine different flows of a process: uniform, periodic, turbulent.

The becoming of water into ice or snowflakes depends on a critical threshold of an intensive difference, i.e. temperature, and by the way there is an expressed singularity in snowflakes, <<each unique and singular, showing what repetition of differences are>>.[179]

So, intensive thinking deals not only with the differences that drive processes but also with those expressed by the process itself.

Maps of distributions of differences are still wanted.

As for topological thinking, a new way of posing spatial problems emerged in scientific practices: from the need of a transcendent space, i.e. the reference to external coordinates in order to address the distances of neighbouring points, through differential calculus in order to calculate the instantaneous value of curvature in each point, a rate of change, eventually local information about points was addressed on the space itself, that is not with reference to external coordinates, without putting a space into a box.[180]

By the way, if we name the above mentioned rate of change as speed of becoming, the actually measured 1 mm per year average erosion rates for the Himalaya would finally be appreciated as evidence that a mountain

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[176] Idem.

[177] De Landa, M., 2011b.

[178] De Landa, M. (2002). *Intensive Science and Virtual Philosophy*. London-New York: Continuum International Publishing, p. 97.

[179] De Landa, M., 2011b.

[180] Idem.

is not a finished being, a mountain is still becoming, its being consisting in becoming: the dramatic, though too slow for our eyes, becoming mountain of a mountain.[181]

Of course, a mountain could be treated like a being, but the point is that in order to see an event, the speed of becoming matters.

So, to get rid of the transcendent coordinates, conceived as if we could assume an absolute reference, space can now be considered not as containing something but becoming shaped by its very contents.

From a geometry that was extensive to an intensive geometry, for a space as a field of fastness and slowness, speeds of becoming, with which curvature is changing at any point.

Moreover, we can deal with a space that is a manifold, marked by diversity or variety, an n-dimensional space, a multiplicity, a space of possibilities.

The phase spaces are possibilities open to a dynamical system: to visualize them, first one needs to identify the relevant ways of changing of a system and may name them degrees of freedom of the system; second, one creates the space, a manifold with as many dimensions as the assessed degrees of freedom; third, a state of the system is thus represented by a point in the space, and a series of states becomes a trajectory.[182]

As for the assessment of the significance, of the relevance of the ways of changing, an art in itself, it occurs to recall the difference between knowing that and knowing how, i.e. a skill, embodied knowledge, taught by example, learned by doing, practicing.[183]

In such a topological thinking, phase spaces are not merely a modelling technique of dynamical behaviour, representational devices visualizing as trajectories in a space a particular episode or a history of the becoming of something; more importantly, they capture graphically what tendencies are, because they show attractors for trajectories, singularities that realize the tendency, be it a minimizing or an optimizing process, of a system: a tendency that appears virtual, i.e. real but not actual.[184]

The discovery of how to represent a system tendency, locating and assigning dimensions, i.e. the relevant ways of changing, showing the eventual attractors, singularities, let us diagram the structure of a space of possibilities, a space of possible states, the phase states, let us diagram the virtual reality of what becomes actual.[185]

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[181] Idem.

[182] Idem.

[183] De Landa, M., 2011b.

[184] Idem.

[185] Idem.

We care about the singularities, also named attractors, in the spaces of possible states because of the trajectory, of the becoming of a structure as a space of possible combination, where certain parts are more likely to become actual, thus dealing with tendencies.

By means of structuring possibility spaces, topological thinking visualizes what looks like the structure of the possible becoming of a system, the virtual tendencies and capabilities, that are real but not necessarily actual, of a dynamic system, of a process.[186]

Topological thinking maps the space of possibilities, trading the complexity of an object with the complexity of the dimensions at a particular point of time, thus any object can be reduced to a point, a state in the making of its own space.[187]

1.6.3 Towards a morphogenetic hypothesis about opera repertoire programs

If essence may be considered as determining identity, so that a shared one may entail resemblance, then the immanence of form-genetic resources in a morphogenetic process could avoid the pitfalls of essentialism, preserving multiplicity and becoming.

Multiplicity, a manifold, may specify the structure of spaces of possibilities, spaces which would explain the regularities exhibited by morphogenetic processes, through the visualization of singularities, attractors.

Difference and repetition together make morphogenesis happen, generating form, at critical points of intensive differences that drive the process, thus objectively productive.

Does a morphogenesis, configurating, architecting opera repertoire programs, as a process driven by some intensive differences that exhibit critical thresholds, happen?

What would the dimensions of the system named "opera season program" be?

In an opera season program, as a dynamic system, we could identify the relevant ways of changing of the system, its degrees of freedom.

We could so identify opera titles, number of opera titles and number of title performances as the degrees of freedom, that are therefore the dimensions of the space, the manifold of opera season programs, marked by diversity and variety through the seasons.

A state of a system becomes a point in the considered space and a series of states becomes a trajectory, possibly showing the tendency of opera season programs.

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[186] De Landa, M., 2011b.

[187] Idem.

Does a form of opera season program become more likely actual?

By diagramming the structure of the space of possibilities for opera season programs, it could be showed a real, virtual program that becomes actual programs.

2. Methods

2.1 The data landscape

For the purposes of this work, I will consider the data provided free of charge by the site "Operabase – the reference for opera performances around the world," that <<has documented operatic activity worldwide since 1996, with over 500,000 performances on file. It records the work of artists in over 900 theatres, and publishes season information to opera-goers in 23 languages.>>[188]

I will take into account the offered statistics[189] of opera performances, namely the "1000 most played titles", from season 2004-2005 to season 2018-2019 (15 seasons), in four countries: Italy, France, Germany and the United Kingdom.

The offered statistics are actually lists that I copied as Microsoft Excel sheets, in order to treat them by means of pivot-tables.

Surely, I could not afford the creation of the database, but claiming that it was too easy to copy it would undermine any effort of giving to the database itself any innovative sense, though of course my ability of gaining any new space of knowledge by the means of my effort remains questionable, provided that the above due recognition of the source is given.

2.2 Descriptive statistics and statistical tests

In descriptive statistics, a box-and-whisker diagram is a standardized way of displaying the distribution of data, a nonparametric way, a distribution-free method (not parameter-free), because the variation displayed in the samples of the considered statistical population does not make any assumption of the implicit statistical distribution.

A box-and-whisker diagram offers a five number summary: minimum, first quartile, median, third quartile, and maximum; the spacings between the facets of a box-and-whisker diagram show the dispersion (variability, spread), the skewness (measure of asymmetry) and the outliers in the data.

The detection of outliers, that is data values that appear to differ significantly from the observed others, estimated by means of the central tendency (the median), can show, apart from chance and variability, errors in measurement, in the procedures, or some flaws in the theory underlying the expectancy of a distribution.

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[188] https://www.operabase.com/en, access on February 14th 2020.

[189] https://www.operabase.com/statistics/en

Outliers may, therefore, belong to a different population than the remaining values of the considered sample, or can be the consequence of changes in a system behavior (e.g. a managerial turn).

The awareness of the apparent inconsistency, discrepancy or surprising observation of the outliers, from the standpoint of the inliers, should promote the following definition of outliers as those << that have been "generated by a different mechanism" than the remainder or major part of the data or than the whatsoever defined reference set.>>[190]

In treating the frequency distribution of title performances during the 15 considered programming seasons, that is dealing with data that follow an unknown population distribution, and specifically looking for some significance in the distribution of title performances, we could consider that a title performances, as a variable, has a chance, in each sample season, to be found within a definite range, with a definite value.

The same line of reasoning is valid for the chance that a title performances will or will not, in the considered sample season, be greater of a certain value.

Here comes the estimate named the median, with probability $p = \frac{1}{2}$, that divides the distribution into two halves and that is less affected by the extreme values that specific influences may well be relevant as for the value of a title performances.

Moreover, the distribution of title performances can be divided into four equal parts by taking into consideration the chances, not to be exceeded, $p = \frac{1}{4}$ for quartile Q_1 and $p = \frac{3}{4}$ for Q_3.

The IQR (InterQuartile Range) is therefore defined as $Q_3 - Q_1$, as a measure of spread, variance of the title performances, in any distribution, even one never actually programmed: Q_1 (with $p=1/4$) and Q_3 (with $p=3/4$) are indeed parameters of the unknown population of title performances, of which the season programs are samples.

As for the outliers, extreme outliers are at $Q_3 + 3*IQR$ (or $Q_1 - 3*IQR$), according to Tukey, who introduced the box-and-whisker plots.

Taking into consideration Chebyshev's theorem, that can be used with any distribution, at least $1-1/k^2$ ($k = \frac{outlier - mean}{standard\ deviation}$) data from a sample must fall within k standard deviations from the mean: e.g. 89% and 93.75% of the title performances, respectively, for k=3 and k=4, must be within the upper and the lower bounds of the distribution.

In order to detect outliers, as a first stage, we can calculate Outlier Detection Values (ODVs) so that any data value that is more extreme than the upper and the lower ODVs is considered to be an outlier. Of course, also

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[190] Zimek, A., & Filzmoser, P. (2018). *There and back again: Outlier detection between statistical reasoning and data mining algorithms.* Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery, 8(6), [e1280]. https://doi.org/10.1002/widm.1280, p.7.

<< this algorithm does not ascertain the reason for the outlier; it identifies potential outlier data, allowing for domain experts to investigate the cause.>>[191]

In the case of unimodal distributions, as the title performances samples appear, <<the equation for the unimodal Chebyshev's inequality that measures the percentage of data outside of k standard deviations from the center is $P(|X-M| \geq kB) \leq = \frac{4}{9*k^2}$), where M is the mode and B = σ^2 +(M−μ), where μ is the mean (sample mean is used to approximate μ), σ is the standard deviation...B as a measure of variability.>>[192]

In the first stage of the procedure, for unimodal distributions, if p_1=0.05, then (k = $\frac{2}{3\sqrt{p}}$) k=2.98. Data that are more extreme then the upper (ODV= μ+ k*σ) and lower (ODV= μ - k*σ) ODVs are removed from the data in order to calculate the mean and standard deviation, in the so truncated sample, needed for the Chebyshev's inequality: << this removes possible outlier bias from these calculations. The second stage uses the truncated dataset to calculate the appropriate ODVs that are then applied to the complete dataset and used to identify outliers.>>[193]

As a second stage, as for detecting outliers using Chebyshev, with p_2=0.01, we recalculate the ODVs with μ, σ, M and B calculated using the truncated dataset: << all data (from the complete dataset) that are more extreme than the appropriate ODV are considered to be outliers.>>[194]

Some clarifications: << the first stage is used to trim the data from values that are possibly outliers. Because the ODV is calculated using the standard deviation from the data, including outliers in the calculation of the standard deviation will inflate the ODV. This makes it more difficult to find outliers that are truly different from the rest of the data. Trimming off a small percentage of the most extreme values helps counter this effect>>;[195] the values of p can be defined by the researcher in view of the characteristics and goals of the research.

<< If the goal of the outlier detection is to flag only those values that are quite different from the population, then the researcher will set p_2 [in the second stage] very small, like 0.001 or 0.0001. If larger than normal values are being trimmed from the data, then p_2 [in the second stage] may be set at 0.01 or 0.05. The values of p_1 [in the first stage] will change according to the beliefs of the researcher as to what proportion of the data

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[191] Amidan, B.G., Ferryman, T.A., Cooley, S.K. (2005) *Data Outlier Detection using the Chebyshev Theorem*. Conference Paper in IEEE Aerospace Conference Proceedings · April 2005, p.1.
https://www.researchgate.net/publication/224624985_Data_outlier_detection_using_the_Chebyshev_theorem/link/562a835008ae518e347f568c/download .

[192] Amidan, B.G., Ferryman, T.A., Cooley, S.K. (2005), p.2.

[193] Idem, p.3.

[194] Ibidem.

[195] Ibidem.

should be used in the calculations. The two-stage process is designed so that p_1 should be larger than p_2 … The decision as to what the probability values should be is a key to the outlier decision making process. The researcher needs to assess the risk and cost involved in making the error of identifying an outlier incorrectly and the error in not identifying a data point that is an outlier. If it is more costly to incorrectly identify a data point as an outlier, then the probabilities should be set very low.>>[196]

A correction as for the skewness should also be taken into consideration.

As a nonparametric test, in order to test an hypothesis, the Mood's median test deals with the equality of medians from two or more populations, calculating a chi-square value, with a probability value for an alpha risk of rejecting a null hypothesis actually true.

The Mood's test assumptions are that: the considered title performances are independent and random samples; the populations distributions have the same shape.

Are the title performances samples actually independent? Moreover and above all: how can the title performances in the considered seasons, the actual result of a decision-making process, the opera titles that were actually performed, be "randomly drawn"? Such a matter shall be definitely coped with in the discussion chapter.

If the observed title performances are equal to the expected ones, then the chi-square is 0 (zero). The greater the value of the chi-square, the greater is the difference between the observed and the expected title performances.

The calculated chi-square value, if there are no differences between the samples and the population, that is in order to accept the null hypothesis, has a p-value greater than the alpha risk of 5 percent ($\alpha = 0.05$).

In order to map the intensive differences that dynamize the morphogenetic process of the seasonal opera repertoire programs, the most performed title is the first minuend from which the subsequent most performed title, subtrahend, is subtracted. The second title then becomes the minuend for the third, subtrahend, and so on. The intensive differences are listed in order to diagram, from within the process, the overall virtual intensive difference that resulted in the considered actual program.

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[196] Amidan, B.G., Ferryman, T.A., Cooley, S.K. (2005), p.3-5.

3. Results

3.1 Opera performances and titles performed (2004-2019)

The data provided by the above mentioned site OPERABASE[197] are synthetically shown by the following tables, in terms of number of opera performances and titles performed in 15 programming seasons in Italy, France, Germany and in the United Kingdom.

PERFORMANCES - Italy		PERFORMANCES - France		PERFORMANCES - Germany		PERFORMANCES - UK	
SEASON	Total	SEASON	Total	SEASON	Total	SEASON	Total
2004-2005	1251	2004-2005	855	2004-2005	4593	2004-2005	699
2005-2006	1179	2005-2006	1053	2005-2006	5671	2005-2006	677
2006-2007	1173	2006-2007	1021	2006-2007	5750	2006-2007	759
2007-2008	1261	2007-2008	964	2007-2008	5649	2007-2008	761
2008-2009	1150	2008-2009	905	2008-2009	5827	2008-2009	830
2009-2010	1218	2009-2010	1061	2009-2010	6129	2009-2010	886
2010-2011	1232	2010-2011	999	2010-2011	5673	2010-2011	799
2011-2012	1338	2011-2012	1170	2011-2012	6019	2011-2012	785
2012-2013	1281	2012-2013	1078	2012-2013	5898	2012-2013	769
2013-2014	1314	2013-2014	1143	2013-2014	6380	2013-2014	962
2014-2015	1497	2014-2015	1112	2014-2015	6187	2014-2015	985
2015-2016	1530	2015-2016	977	2015-2016	6072	2015-2016	1019
2016-2017	1697	2016-2017	960	2016-2017	5942	2016-2017	853
2017-2018	1636	2017-2018	1091	2017-2018	5943	2017-2018	993
2018-2019	1835	2018-2019	993	2018-2019	6044	2018-2019	846
SUM	20592	SUM	15382	SUM	87777	SUM	12623
AVERAGE	1372,800	AVERAGE	1025,467	AVERAGE	5851,800	AVERAGE	841,533

Table 1 – Opera Performances in Italy, France, Germany and the UK (2004-2019)

TITLES - Italy		TITLES - France		TITLES - Germany		TITLES - UK	
SEASON	Total	SEASON	Total	SEASON	Total	SEASON	Total
2004-2005	152	2004-2005	140	2004-2005	256	2004-2005	103
2005-2006	122	2005-2006	171	2005-2006	305	2005-2006	107
2006-2007	129	2006-2007	146	2006-2007	309	2006-2007	114
2007-2008	153	2007-2008	153	2007-2008	324	2007-2008	117
2008-2009	155	2008-2009	146	2008-2009	336	2008-2009	131
2009-2010	133	2009-2010	182	2009-2010	345	2009-2010	127
2010-2011	136	2010-2011	160	2010-2011	337	2010-2011	122
2011-2012	129	2011-2012	191	2011-2012	355	2011-2012	117
2012-2013	133	2012-2013	171	2012-2013	336	2012-2013	118
2013-2014	135	2013-2014	187	2013-2014	369	2013-2014	137
2014-2015	139	2014-2015	170	2014-2015	354	2014-2015	142
2015-2016	154	2015-2016	159	2015-2016	353	2015-2016	145
2016-2017	165	2016-2017	158	2016-2017	319	2016-2017	135
2017-2018	171	2017-2018	159	2017-2018	327	2017-2018	124
2018-2019	161	2018-2019	152	2018-2019	326	2018-2019	111
SUM*	803	SUM*	900	SUM*	1567	SUM*	735

*Sum of Titles actually performed at least once

Table 2 – Titles performed in Italy, France, Germany and the UK (2004-2019)

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[197] https://www.operabase.com/en, access on February 14th 2020.

As far as the sum line in the above table is concerned, it is the sum of the different titles performed, at least once, in the 15 considered seasons.

3.2 Descriptive statistics of opera performances and titles performed

In terms of descriptive statistics, we show now the three main characteristics, i.e. the distribution, the central tendency and the dispersion, of the observed variables: opera performances and titles performed.
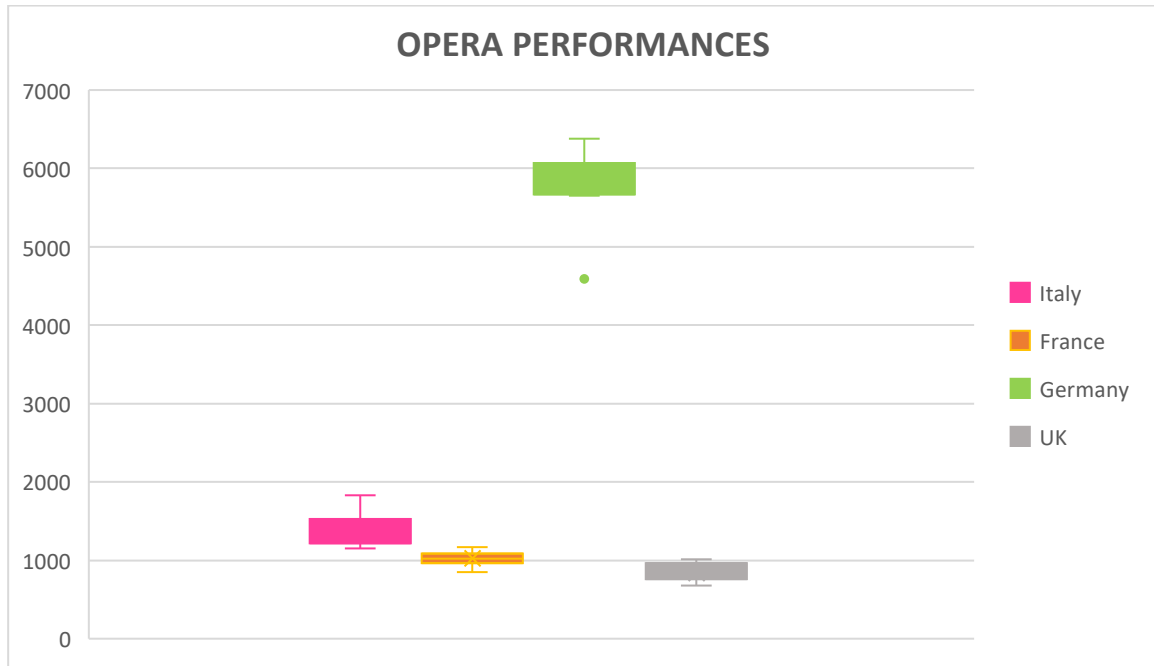
Figure 5 – Opera Performances in Italy, France, Germany and the UK (2004-2019)

In Italy, the minimum is 1150 (2008-2009), the maximum is 1835 performances (2018-2019), the median (Q_2) is 1281 performances and, from 1218 (Q_1, first quartile) to 1530 (Q_3, third quartile) performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 312. As for a quantile definition of skewness, according to the formula $\frac{(Q_3 - Q_2) - (Q_2 - Q_1)}{(Q_3 - Q_1)}$, bounded in the interval

[-1, 1], it measures +0.60.

In France, the minimum is 855 (2004-2005), the maximum is 1170 performances (2011-2012), the median (Q_2) is 1021 performances and, from 964 (Q_1, first quartile) to 1091 (Q_3, third quartile) performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 127. As for the above mentioned quantile definition of skewness, it measures +0.10.

In Germany, the minimum is 5649 (2007-2008), the maximum is 6380 performances (2013-2014), the median (Q_2) is 5942 performances and, from 5673 (Q_1, first quartile) to 6072 (Q_3, third quartile) performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 399. As for the above mentioned quantile definition of skewness, it

measures -0.35. It is also shown an outlier value, 4593 performances (2004-2005), below the first quartile by a measure of 2.71*IQR (extreme outliers: $Q_1 - 3*IQR$)[198].

In the United Kingdom, the minimum is 677 (2005-2006), the maximum is 1019 performances (2015-2016), the median (Q_2) is 830 performances and, from 761 (Q_1, first quartile) to 962 (Q_3, third quartile) performances, the IQR (InterQuartile Range, $Q_3 - Q_1$) = 201. As for the above mentioned quantile definition of skewness, it measures +0.31.

Taking into account that data are normally distributed with an IQR = 1.35 σ,[199] where σ is the population standard deviation, it would appear that in all the four considered countries, the opera performances are not normally distributed.

Moreover, Italy (with σ = 213.7, IQR = 312 > 288,5) France (with σ = 87.4, IQR = 127 > 118.0) and the UK (with σ = 107.8, IQR = 201 > 145.6) share a common form, other than the one in Germany (with σ = 405.5, IQR = 399 < 547.4).

As for the titles performed,
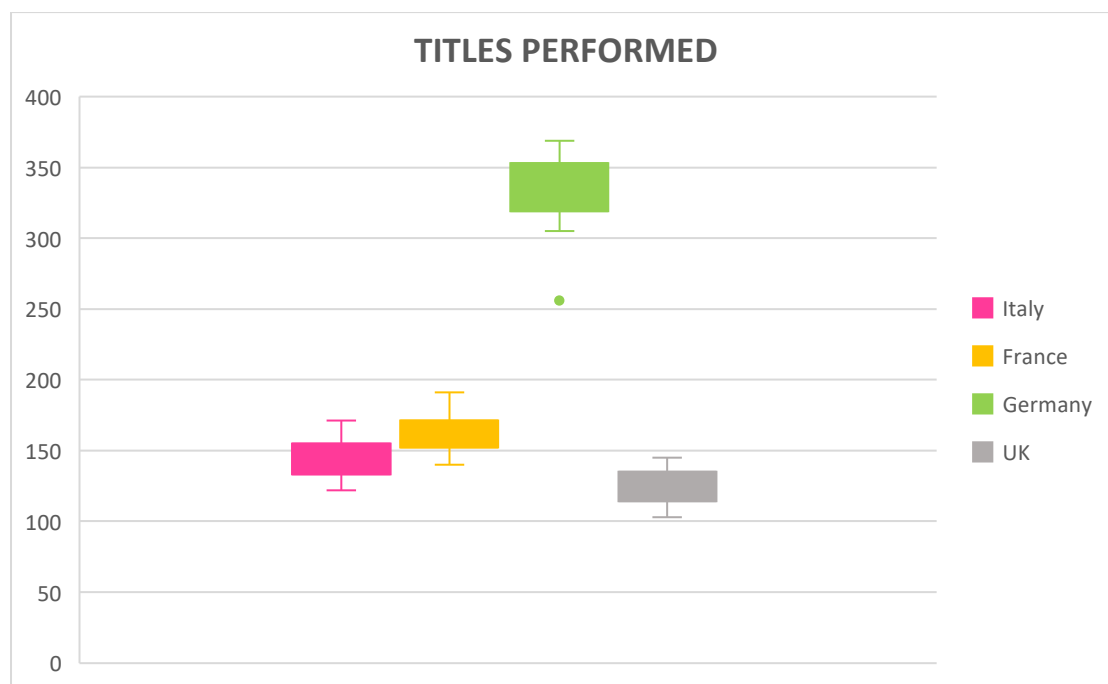
Figure 6 – Titles performed in Italy, France, Germany and the UK (2004-2019)

In Italy, the minimum is 122 (2005-2006), the maximum is 171 titles performed (2017-2018), the median (Q_2) is 139 titles and, from 133 (Q_1, first quartile) to 155 (Q_3, third quartile) titles, the IQR (InterQuartile Range,

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[198] Tukey, J.W. (1977).

[199] Idem.

Q_3 - Q_1) = 22. As for a quantile definition of skewness, according to the formula $\frac{(Q_3 - Q_2) - (Q_2 - Q_1)}{(Q_3 - Q_1)}$, bounded in the interval [-1, 1], it measures +0.45.

In France, the minimum is 140 (2004-2005), the maximum is 191 titles performed (2011-2012), the median (Q_2) is 159 titles and, from 152 (Q_1, first quartile) to 171 (Q_3, third quartile) titles, the IQR (InterQuartile Range, Q_3 - Q_1) = 19. As for the above mentioned quantile definition of skewness, it measures +0.26.

In Germany, the minimum is 305 (2005-2006), the maximum is 369 titles performed (2013-2014), the median (Q_2) is 336 titles and, from 319 (Q_1, first quartile) to 353 (Q_3, third quartile) titles, the IQR (InterQuartile Range, Q_3 - Q_1) = 34. As for the above mentioned quantile definition of skewness, it measures 0, it is a symmetric distribution. It is also shown an outlier value, 256 titles performed (2004-2005), below the first quartile by a measure of 1.85*IQR (extreme outliers: Q_1 – 3*IQR).

In the United Kingdom, the minimum is 103 (2004-2005), the maximum is 145 titles performed (2015-2016), the median (Q_2) is 122 titles and, from 114 (Q_1, first quartile) to 135 (Q_3, third quartile) titles, the IQR (InterQuartile Range, Q_3 - Q_1) = 21. As for the above mentioned quantile definition of skewness, it measures +0.24.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in all the four considered countries, the titles performed are not normally distributed.

Moreover, Italy (with σ = 15.0, IQR = 22 > 20.3) and the UK (with σ = 12.7, IQR = 21 > 17.1) share a common form, other than the one in France (with σ = 15.3, IQR = 19 < 20.7) and in Germany (with σ = 27.2, IQR = 34 < 36.7).

3.3 Descriptive statistics of title performances

The following box-plots describe the distribution of the title performances in France, Germany, the UK and Italy (2004-2019).
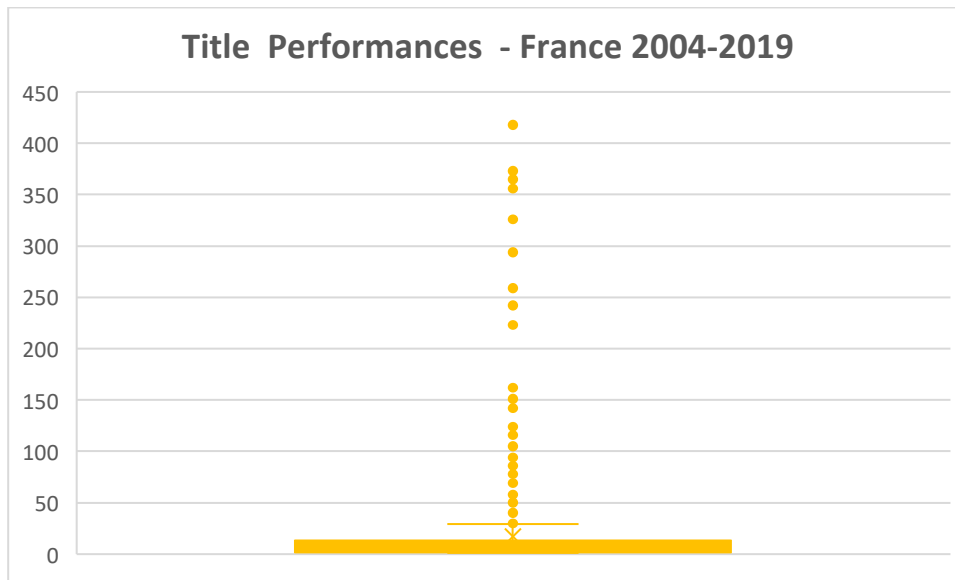
Figure 7 - Title Performances in France (2004-2019)

In France, the minimum is of course always 1 title performances (a title, in order to be considered, was performed at least once; 138 titles: e.g. *Berenice*, by Händel), the maximum is 29 title performances (5 titles: e.g. *Semiramide,* by Rossini), the median (Q_2) is 5 title performances (64 titles: e.g., *Il killer di parole*, by Ambrosini) and, from 2 (Q_1, first quartile; 113 titles: e.g. *La Belle et la Bête*, by Glass) to 13 (Q_3, third quartile; 18 titles: e.g. *La Dame de Monte-Carlo,* by Poulenc) title performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 11. As for a quantile definition of skewness, according to the formula $\frac{(Q_3-Q_2)-(Q_2-Q_1)}{(Q_3-Q_1)}$, bounded in the interval [-1, 1], it measures +0.45. There are also shown 109 values of title performances as outliers: among them, 1 (i.e. 418 title performances of *Die Zauberflöte*, by Mozart) at 36.82*IQR above Q_3; 4 (i.e. 377 performances of *Carmen* by Bizet; 373 performances of *Il barbiere di Siviglia*, by Rossini; 365 of *Don Giovanni*, by Mozart; 356 of *La traviata*, by Verdi) from 31.18*IQR to 33.09*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.001, there are no outliers.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in Italy the title performances are not normally distributed (with σ = 41.1, IQR = 11 < 55.4).
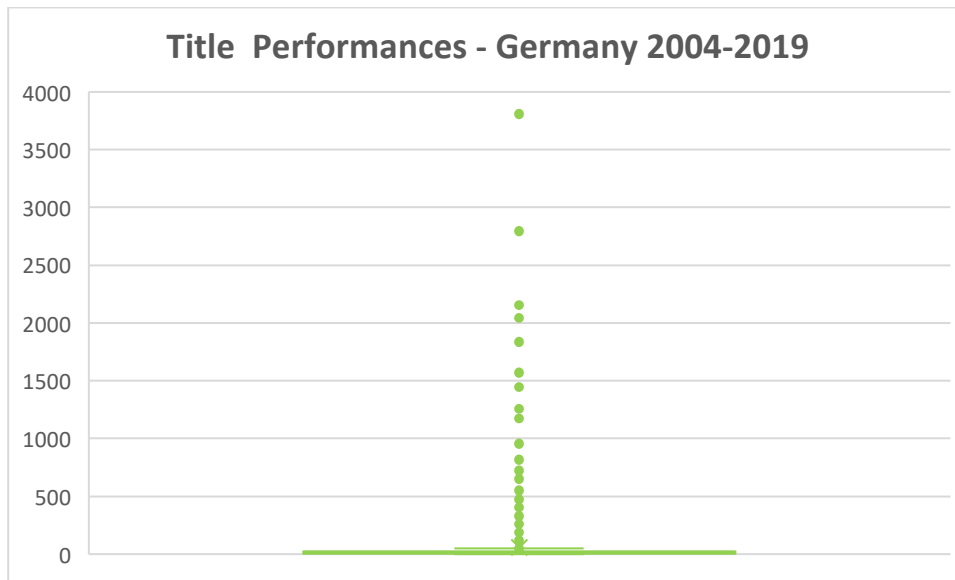
Figure 8 - Title Performances in Germany (2004-2019)

In Germany, the minimum is of course always 1 title performances (a title, in order to be considered, was performed at least once; 109 titles: e.g. *Apollo e Dafne*, di Händel), the maximum is 47 title performances (3 titles: e.g. *Des Kaisers neue Kleider,* di Lofer), the median (Q_2) is 9 title performances (69 titles: e.g., *Un re in ascolto*, di Berio) and, from 5 (Q_1, first quartile; 111 titles: e.g. *Medusa*, di Felice) to 22 (Q_3, third quartile; 12 titles: e.g. *Mosè in Egitto,* di Rossini) title performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 17. As for a quantile definition of skewness, according to the formula $\frac{(Q_3 - Q_2) - (Q_2 - Q_1)}{(Q_3 - Q_1)}$, bounded in the interval [-1, 1], it measures +0.53. There are also shown 228 values of title performances as outliers: among them, 1 (i.e. 3808 title performances of *Die Zauberflöte*, by Mozart) at 222.71*IQR above Q_3; 1 (i.e. 2796 title performances of *Hänsel und Gretel*, by Humperdinck) at 163.18*IQR above Q_3; 4 (i.e. 2156 performances of *La bohème*, by Puccini; 2106 performances of *Le nozze di Figaro*, by Mozart; 2074 of *La traviata*, by Verdi; 2043 of *Carmen*, by Bizet) from 118.88*IQR to 125.53*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.001, there are 8 outliers with ODV=1696

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in Italy the title performances are not normally distributed (with σ = 217.3, IQR = 17 < 293.4).
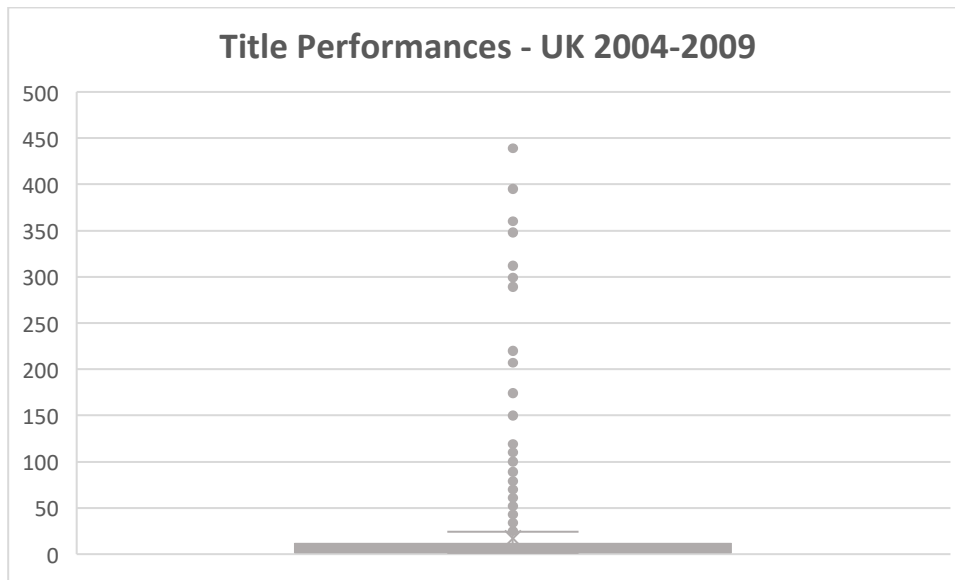
Figure 9 – Title Performances in UK (2004-2019)

In the United Kingdom, the minimum is of course always 1 title performances (a title, in order to be considered, was performed at least once; 114 titles: e.g. *Elisabetta, regina d'Inghilterra*, di Rossini), the maximum is 24 title performances (2 titles: *Capriccio,* di Strauss, R., and *Street Scene*, di Weill), the median (Q_2) is 5 title performances (51 titles: e.g., *Miss Fortune*, di Weir) and, from 2 (Q_1, first quartile; 95 titles: e.g. *Seven Angels*, di Bedford) to 11 (Q_3, third quartile; 12 titles: e.g. *La finta semplice,* di Mozart) title performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 9. As for a quantile definition of skewness, according to the formula $\frac{(Q_3-Q_2)-(Q_2-Q_1)}{(Q_3-Q_1)}$, bounded in the interval [-1, 1], it measures +0.33. There are also shown 111 values of title performances as outliers: among them, 1 (i.e. 439 title performances of *La behème*, by Puccini) at 47.56*IQR above Q_3; 2 (i.e. 399 performances of *La traviata*, by Verdi; 395 performances of *Le nozze di Figaro*, by Mozart) from 42.67*IQR to 43.11*IQR; 2 (i.e. 360 performances of *Die Zauberflöte*, by Mozart; 348 performances of *Don Giovanni*, by Mozart) from 37.44*IQR to 38.78*IQR.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.001, there are no outliers.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in Italy the title performances are not normally distributed (with σ = 44.3, IQR = 9 < 59.8).
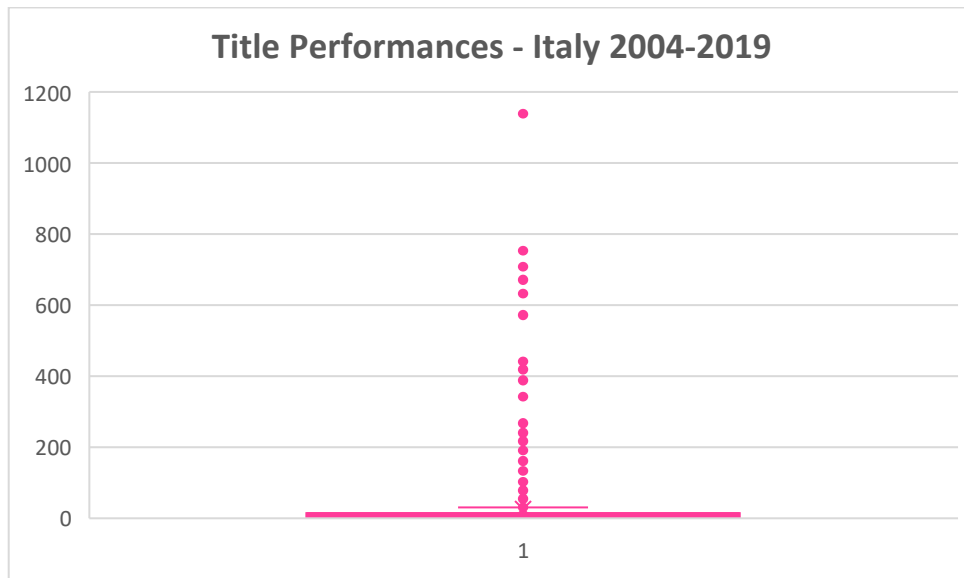
Figure 10 - Title Performances in Italy (2004-2019)

In Italy, the minimum is of course always 1 title performances (a title, in order to be considered, was performed at least once; 83 titles: e.g. *Il flauto tragico*, by Vetrano), the maximum is 29 title performances (2 titles: *Il Corsaro* by Verdi and *Il ritorno d'Ulisse in patria,* by *Monteverdi*), the median (Q_2) is 5 title performances (57 titles: e.g., *Nixon in China* by Adams) and, from 2 (Q_1, first quartile; 141 titles: e.g. *Miracolo a Milano*, by Battistelli) to 13 (Q_3, third quartile; 7 titles: e.g. *Elisabetta, regina d'Inghilterra*, by Rossini) title performances, the IQR (InterQuartile Range, $Q_3 - Q_1$) = 11. As for a quantile definition of skewness, according to the formula $\frac{(Q_3 - Q_2) - (Q_2 - Q_1)}{(Q_3 - Q_1)}$, bounded in the interval [-1, 1], it measures +0.45. There are also shown 104 values of title performances as outliers: among them, 1 (i.e. 1139 title performances s of *La traviata*, by Verdi) at 102.36*IQR above Q_3; 7 (i.e. 753 performances of *La bohème* by Puccini; 708 performances of *Tosca*, by Puccini; 671 of *Il barbiere di Siviglia*, by Rossini; 637 of *Madama Butterfly*, by Puccini; 634 of *Aida*, by Verdi; 632 of *Rigoletto*, by Verdi; 572 of *Carmen*, by Bizet) from 50.82*IQR to 67.27*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.001, there are 2 outliers with ODV=731.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in Italy the title performances are not normally distributed (with σ = 86.1, IQR = 11 < 116.2).

3.4 Descriptive statistics of title performances in Italy

The following table shows a five number summary of title performances as for each sample season in Italy, from 2004 to 2019.

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2004-2005	1	3	6	11	23
2005-2006	1	2	6	12	27
2006-2007	1	3	6	10	19
2007-2008	1	3	6	9	18
2008-2009	1	2	5	8	17
2009-2010	1	2	5	9,5	20
2010-2011	1	2	5	9,75	21
2011-2012	1	3	5	11	22
2012-2013	1	2	5	10	21
2013-2014	1	2	5	10	20
2014-2015	1	3	6	12	25
2015-2016	1	2	5	9	18
2016-2017	1	2	5	10	22
2017-2018	1	2	4	8	17
2018-2019	1	2	5	10	20

Tavola 3 – Five number summary of each sample season in Italy (2004-2019)

In each sample season, the minimum is of course always 1 title performances (a title, in order to be considered, was performed at least once.

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2004-2005	1	3	6	11	23

In 2004-2005, 8 titles were performed just once: e.g. *La vida breve*, by Falla; the maximum is 23 title performances (1 title: *Werther,* by Massenet), the median (Q$_2$) is 6 title performances (11 titles: e.g., *Il turco*

in Italia, by Rossini) and, from 3 (Q_1, first quartile; 16 titles: e.g. *Re Enzo*, by Respighi) to 11 (Q_3, third quartile; 12 titles: e.g. *Elisabetta, regina d'Inghilterra*, by Rossini) title performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 8. As for a quantile definition of skewness, according to the formula $\frac{(Q_3 - Q_2) - (Q_2 - Q_1)}{(Q_3 - Q_1)}$, bounded in the interval [-1, 1], it measures +0.25. There are 8 values of title performances as outliers: among them, 1 (i.e. 65 title performances of *La bohème*, by Puccini) at 6.75*IQR above Q_3; 1 (i.e. 46 performances of *La traviata* by Verdi) at 4.38*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there is 1 outlier with ODV=54.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2004-2205 in Italy the title performances are not normally distributed (with σ = 8.6, IQR = 8 < 11.7).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2005-2006	1	2	6	12	27

In 2005-2006, 8 titles were performed just once: e.g. *Impresario in angustie*, by Cimarosa; the maximum is 27 title performances (1 title: *Nabucco,* by Verdi), the median (Q_2) is 6 title performances (9 titles: e.g., *Tancredi,* by Rossini) and, from 2 (Q_1, first quartile; 25 titles: e.g. *Li finti filosofi*, by Spontini) to 12 (Q_3, third quartile; 2 titles: *La sonnambula*, by Bellini and *I quatro rusteghi, by Wolf-Ferrari*) title performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 10. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.20. There are 12 values of title performances as outliers: among them, 1 (i.e. 44 title performances of *Turandot*, by Puccini) at 3.2*IQR above Q_3; 2 (i.e. 43 performances of *Il barbiere di Siviglia, by Rossini and Aida,* by Verdi) at 3.1*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there are no outliers.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2005-2206 the title performances are not normally distributed (with σ = 10.4, IQR = 10 < 14.1).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2006-2007	1	3	6	10	19

In 2006-2007, 7 titles were performed just once: e.g. *La finta semplice*, by Mozart; the maximum is 19 title performances (2 titles: *Nabucco,* by Verdi and *Orfeo ed Euridice*, by Gluck), the median (Q_2) is 6 title performances (10 titles: e.g., *Il dissoluto assolto,* by Corghi) and, from 3 (Q_1, first quartile; 15 titles: e.g. *La fanciulla del West*, by Puccini) to 10 (Q_3, third quartile; 5 titles: *Le nozze di Figaro*, by Mozart) title performances, the IQR (InterQuartile Range, $Q_3 - Q_1$) = 7. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.14. There are 14 values of title performances as outliers: among them, 1 (i.e. 53 title performances of *La bohème*, by Puccini) at 6.14*IQR above Q_3; 1 (i.e. 52 performances of *La traviata,* by Verdi) at 6*IQR above Q_3; 1 (i.e. 42 performances of *Don Giovanni*, by Mozart) at 4.57*IQR above Q_3; 1 (i.e. 38 performances of *Il barbiere di Siviglia*, by Rossini) at 4*IQR above Q_3; 1 (i.e. 37 performances of *Cavalleria rusticana*, by Mascagni) at 3.86*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there are no outliers.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2006-2207 the title performances are not normally distributed (with σ = 9.6, IQR = 7 < 13,0).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2007-2008	1	3	6	9	18

In 2007-2008, 12 titles were performed just once: e.g. *Il matrimonio inaspettato*, by Paisiello; the maximum is 18 title performances (5 titles: e.g. Il *barbiere di Siviglia*, by Rossini), the median (Q_2) is 6 title performances (17 titles: e.g., *Il matrimonio segreto,* by Cimarosa) and, from 3 (Q_1, first quartile; 11 titles: e.g. *Il Socrate immaginario*, by Paisiello) to 9 (Q_3, third quartile; 5 titles: *La fanciulla del West*, by Puccini) title performances, the IQR (InterQuartile Range, $Q_3 - Q_1$) = 6. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.0. There are 13 values of title performances as outliers: among them, 1 (i.e. 58 title performances of *Tosca*, by Puccini) at 8.17*IQR above Q_3; 1 (i.e. 54 performances of *Madama Butterfly,* by Puccini) at 7.5*IQR above Q_3; 1 (i.e. 43 performances of *Carmen*, by Bizet) at 5.7*IQR above Q_3; 1 (i.e. 39 performances of *La bohème*, by Puccini) at 5*IQR above Q_3; 1 (i.e. 32 performances of *La traviata*, by Verdi) at 3.83*IQR above Q_3; 2 (i.e. 30 performances of *Falstaff* and *Aida* by Verdi) at 3.5*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there is 1 outlier above ODV=56.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2007-2208 the title performances are not normally distributed (with σ = 9.2, IQR = 6 < 12.4).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2008-2009	1	2	5	8	17

In 2008-2009, 14 titles were performed just once: e.g. *Orlando furioso*, by Vivaldi; the maximum is 17 title performances (3 titles: e.g. *Medea*, by Cherubini, *I puritani*, by Bellini and *Adriana Lecouvreur*, by Cilea), the median (Q_2) is 5 title performances (14 titles: e.g., *I Capuleti e I Montecchi,* by Bellini) and, from 2 (Q_1, first quartile; 40 titles: e.g. *Il matrimonio segreto*, by Cimarosa) to 8 (Q_3, third quartile; 6 titles: *Norma*, by Bellini) title performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 6. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.0. There are 14 values of title performances as outliers: among them, 1 (i.e. 60 title performances of *Aida*, by Verdi) at 8.67*IQR above Q_3; 1 (i.e. 40 performances of *Rigoletto,* by Verdi) at 5.33*IQR above Q_3; 3 (i.e. 38 performances of *Carmen*, by Bizet, *Turandot* e *Tosca*, by Puccini) at 5.0*IQR above Q_3; 1 (i.e. 35 performances of *La bohème*, by Puccini) at 4.5*IQR above Q_3; 1 (i.e. 34 performances of *Pagliacci*, by Leoncavallo) at 4.33*IQR above Q_3; 1 (i.e. 30 performances of *Hänsel und Gretel*, by Humperdinck) at 3.67*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there is 1 outlier above ODV=45.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2008-2009 the title performances are not normally distributed (with σ = 9.1, IQR = 6 < 12.2).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2009-2010	1	2	5	9,5	20

In 2009-2010, 9 titles were performed just once: e.g. *Arlecchino finto morto*, by Tarabella; the maximum is 20 title performances (2 titles: e.g. *Il trovatore*, by Verdi and *Il campanello di notte*, by Donizetti), the median (Q_2) is 5 title performances (11 titles: e.g., *Il mondo alla rovescia,* by Salieri) and, from 2 (Q_1, first quartile;

30 titles: e.g. *Lucrezia Borgia*, by Donizetti) to 9.5 (Q_3, third quartile; 4 titles: e.g. *Così fan tutte*, by Mozart) title performances, the IQR (InterQuartile Range, $Q_3 - Q_1$) = 7.5. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.2. There are 14 values of title performances as outliers: among them, 1 (i.e. 63 title performances of *La traviata*, by Verdi) at 7.13*IQR above Q_3; 1 (i.e. 54 performances of *L'elisir d'amore,* by Donizetti) at 5.93*IQR above Q_3; 1 (i.e. 52 performances of *La bohème*, by Puccini) at 5.67*IQR above Q_3; 1 (i.e. 51 performances of *Rigoletto*, by Verdi) at 5.53*IQR above Q_3; 2 (i.e. 41 performances of *Tosca* and *Madama Butterfly,* by Puccini) at 4.2*IQR above Q_3; 1 (i.e. 39 performances of *Il barbiere di Siviglia*, by Rossini) at 3.93*IQR above Q_3; 1 (i.e. 38 performances of *Aida*, by Verdi) at 3.8*IQR above Q_3; 1 (i.e. 32 performances of *Nabucco*, by Verdi) at 3.0*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there is no outlier.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2009-2010 the title performances are not normally distributed (with σ = 11.7, IQR = 7.5 < 15.8).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2010-2011	1	2	5	9,75	21

In 2010-2011, 15 titles were performed just once: e.g. *La cambiale di matrimonio*, by Rossini; the maximum is 21 title performances (1 title: *Don Pasquale*, by Donizetti), the median (Q_2) is 5 title performances (13 titles: e.g., *Il killer di parole,* by Ambrosini) and, from 2 (Q_1, first quartile; 24 titles: e.g. *Pinocchio*, by Valtinoni) to 9.75 (Q_3, third quartile; 3 titles: e.g. *La forza del destino,* by Verdi) title performances, the IQR (InterQuartile Range, $Q_3 - Q_1$) = 7.75. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.23. There are 16 values of title performances as outliers: among them, 1 (i.e. 72 title performances of *La traviata*, by Verdi) at 8.03*IQR above Q_3; 1 (i.e. 51 performances of *Rigoletto,* by Verdi) at 5. 32*IQR above Q_3; 1 (i.e. 48 performances of *L'elisir d'amore*, by Donizetti) at 4.94*IQR above Q_3; 1 (i.e. 41 performances of *Il barbiere di Siviglia,* by Rossini) at 4.03*IQR above Q_3; 1 (i.e. 38 performances of *Tosca,* by Puccini) at 3.65*IQR above Q_3; 2 (i.e. 36 performances of *La bohème*, by Puccini and *Cavalleria Rusticana*, by Mascagni) at 3.39*IQR above Q_3; 1 (i.e. 35 performances of *Pagliacci*, by Leoncavallo) at 3.26*IQR above Q_3; 1 (i.e. 34 performances of *Lucia di Lammermoor*, by Donizetti) at 3.13*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there is 1 outlier with ODV=72.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2010-2011 the title performances are not normally distributed (with σ = 11.4, IQR = 7.75 < 15.4).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2011-2012	1	3	5	11	22

In 2011-2012, 9 titles were performed just once: e.g. *Suor Angelica*, by Puccini; the maximum is 22 title performances (1 title: *Die Dreigroschenoper*, by Weill), the median (Q_2) is 5 title performances (10 titles: e.g., *Iris,* by Mascagni) and, from 3 (Q_1, first quartile; 23 titles: e.g. *Pinocchio*, by Valtinoni) to 11 (Q_3, third quartile; 4 titles: e.g. *Nabucco,* by Verdi) title performances, the IQR (InterQuartile Range, $Q_3 - Q_1$) = 8. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.5. There are 14 values of title performances as outliers: among them, 1 (i.e. 88 title performances of *La bohème*, by Puccini) at 9.63*IQR above Q_3; 1 (i.e. 77 performances of *Carmen,* by Bizet) at 8.25*IQR above Q_3; 1 (i.e. 52 performances of *Tosca*, by Puccini) at 5.13*IQR above Q_3; 2 (i.e. 50 performances of *Rigoletto* and *La traviata,* by Verdi) at 4.88*IQR above Q_3; 1 (i.e. 46 performances of *Aida,* by Verdi) at 4.38*IQR above Q_3; 2 (i.e. 43 performances of *Le nozze di Figaro*, by Mozart and *Il barbiere di Siviglia*, by Rossini) at 4.0*IQR above Q_3; 1 (i.e. 40 performances of *Madama Butterfly*, by Puccini) at 3.63*IQR above Q_3. In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there is 1 outlier with ODV=82.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2011-2012 the title performances are not normally distributed (with σ = 14.3, IQR = 8 < 19.28).

| SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2012-2013	1	2	5	10	21

In 2012-2013, 21 titles were performed just once: e.g. *Tancredi*, by Rossini; the maximum is 21 title performances (2 titles: *Le nozze di Figaro*, by Mozart and *Carmen,* by Bizet), the median (Q_2) is 5 title performances (13 titles: e.g., *L'occasione fa il ladro,* by Rossini) and, from 2 (Q_1, first quartile; 20 titles: e.g. *La serva padrona*, by Pergolesi) to 10 (Q_3, third quartile; 5 titles: e.g. *La Cenerentola,* by Rossini) title

performances, the IQR (InterQuartile Range, $Q_3 - Q_1$) = 8. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.25. There are 17 values of title performances as outliers: among them, 1 (i.e. 90 title performances of *La traviata*, by Verdi) at 10.0*IQR above Q_3; 1 (i.e. 73 performances of *Rigoletto,* by Verdi) at 7.88*IQR above Q_3; 1 (i.e. 59 performances of *Nabucco*, by Verdi) at 6.13*IQR above Q_3; 1 (i.e. 51 performances of *Macbeth,* by Verdi) at 5.13*IQR above Q_3; 1 (i.e. 40 performances of *Don Giovanni,* by Mozart) at 3.75*IQR above Q_3; 1 (i.e. 34 performances of *La bohème*, by Puccini) at 3.0*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there is 2 outliers with ODV=72.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2012-2013 the title performances are not normally distributed (with σ = 13.5, IQR = 8 < 18.2).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2013-2014	1	2	5	10	20

In 2013-2014, 30 titles were performed just once: e.g. *Amici*, by Bellisario; the maximum is 20 title performances (1 title: *Nabucco*, by Verdi), the median (Q_2) is 5 title performances (12 titles: e.g., *La serva padrona,* by Pergolesi) and, from 2 (Q_1, first quartile; 12 titles: e.g. *Lucrezia Borgia*, by Donizetti) to 10 (Q_3, third quartile; 4 titles: e.g. *La clemenza di Tito,* by Mozart) title performances, the IQR (InterQuartile Range, $Q_3 - Q_1$) = 8. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.25. There are 16 values of title performances as outliers: among them, 1 (i.e. 65 title performances of *Il barbiere di Siviglia*, by Rossini) at 6.88*IQR above Q_3; 1 (i.e. 64 performances of *La traviata,* by Verdi) at 6.75*IQR above Q_3; 1 (i.e. 58 performances of *Tosca*, by Puccini) at 6.0*IQR above Q_3; 1 (i.e. 54 performances of *Aida,* by Verdi) at 5.5*IQR above Q_3; 1 (i.e. 53 performances of *Madama Butterfly,* by Puccini) at 5.38*IQR above Q_3; 1 (i.e. 50 performances of *La bohème*, by Puccini) at 5.0*IQR above Q_3; 1 (i.e. 47 performances of *Carmen*, by Bizet) at 4.63*IQR above Q_3; 2 (i.e. 44 performances of *Turandot*, by Puccini and *L'elisir d'amore*, by Donizetti) at 4.25*IQR above Q_3; 1 (i.e. 37 performances of *Pagliacci*, by leoncavallo) at 3.38*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there are no outliers.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2013-2014 the title performances are not normally distributed (with σ = 13.8, IQR = 8 < 18.6).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2014-2015	1	3	6	12	25

In 2014-2015, 15 titles were performed just once: e.g. *Impresario in angustie*, by Cimarosa; the maximum is 25 title performances (2 titles: *Lucia di Lammermoor*, by Donizetti and *Falstaff*, by Verdi), the median (Q_2) is 6 title performances (17 titles: e.g., *Il viaggio di Roberto,* by Marzocchi) and, from 3 (Q_1, first quartile; 11 titles: e.g. *Dafne*, by Caldara) to 12 (Q_3, third quartile; 2 titles: e.g. *Lucio Silla,* by Mozart and *La rondine*, by Puccini) title performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 9. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.33. There are 13 values of title performances as outliers: among them, 1 (i.e. 80 title performances of *La traviata*, by Verdi) at 7.55*IQR above Q_3; 1 (i.e. 73 performances of *Tosca,* by Puccini) at 6.78*IQR above Q_3; 2 (i.e. 66 performances of *Madama Butterfly*, by Puccini and *Il barbiere di Siviglia*, by Rossini) at 6.0*IQR above Q_3; 1 (i.e. 57 performances of *Don Giovanni,* by Mozart) at 5.0*IQR above Q_3; 1 (i.e. 51 performances of *Aida,* by Verdi) at 4.33*IQR above Q_3; 1 (i.e. 39 performances of *Carmen*, by Bizet) at 3.0*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there are 2 outliers with ODV=69.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2014-2015 the title performances are not normally distributed (with σ = 14.4, IQR = 9 < 19.4).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2015-2016	1	2	5	9	18

In 2015-2016, 16 titles were performed just once: e.g. *Lo specchio magico*, by Vacchi; the maximum is 18 title performances (1 title: *Suor Angelica*, by Puccini), the median (Q_2) is 5 title performances (13 titles: e.g., *Pagliacci,* by Leoncavallo) and, from 2 (Q_1, first quartile; 24 titles: e.g. *Anna Bolena*, by Donizetti) to 9 (Q_3, third quartile; 9 titles: e.g. *La fanciulla del West,* by Puccini) title performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 7. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it

measures +0.14. There are 18 values of title performances as outliers: among them, 1 (i.e. 112 title performances of *La traviata*, by Verdi) at 14.71*IQR above Q_3; 1 (i.e. 83 performances of *La bohème,* by Puccini) at 10.57*IQR above Q_3; 2 (i.e. 61 performances of *L'elisir d'amore*, by Donizetti and *Il barbiere di Siviglia*, by Rossini) at 7.43*IQR above Q_3; 1 (i.e. 53 performances of *Madama Butterfly,* by Puccini) at 6.29*IQR above Q_3; 1 (i.e. 52 performances of *Aida,* by Verdi) at 6.14*IQR above Q_3; 1 (i.e. 49 performances of *Rigoletto*, by Verdi) at 5.71*IQR above Q_3; 1 (i.e. 48 performances of *Tosca*, by Puccini) at 5.57*IQR above Q_3; 3 (i.e. 34 performances of *Nabucco*, by Verdi, *Le nozze di* Figaro, by Mozart and *La Cenerentola*, by Rossini) at 3.57*IQR above Q_3; 1 (i.e. 33 performances of *Lucia di Lammermoor*, by Donizetti) at 3.43*IQR above Q_3; 1 (i.e. 31 performances of *Carmen*, by Bizet) at 3.14*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there are 2 outliers with ODV=78.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2015-2016 the title performances are not normally distributed (with σ = 15.3, IQR = 7 < 20.6).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2016-2017	1	2	5	10	22

In 2016-2017, 21 titles were performed just once: e.g. *Un giorno di regno*, by Verdi; the maximum is 22 title performances (3 titles: *I masnadieri* and *Don Carlo*, by Verdi and *La Cenerentola*, by Rossini), the median (Q_2) is 5 title performances (12 titles: e.g., *Gina,* by Cilea) and, from 2 (Q_1, first quartile; 22 titles: e.g. *Re Enzo*, by Respighi) to 10 (Q_3, third quartile; 3 titles: e.g. *La pietra del paragone,* by Rossini) title performances, the IQR (InterQuartile Range, Q_3 - Q_1) = 8. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.25. There are 18 values of title performances as outliers: among them, 1 (i.e. 101 title performances of *La traviata*, by Verdi) at 11.5*IQR above Q_3; 1 (i.e. 73 performances of *Il barbiere di Siviglia,* by Rossini) at 7.88*IQR above Q_3; 2 (i.e. 63 performances of *Tosca* and *La bohème*, by Puccini) at 6.63*IQR above Q_3; 1 (i.e. 55 performances of *Die Zauberflöte,* by Mozart) at 5.63*IQR above Q_3; 1 (i.e. 51 performances of *Turandot,* by Puccini) at 5.13*IQR above Q_3; 1 (i.e. 50 performances of *Rigoletto*, by Verdi) at 5.0*IQR above Q_3; 1 (i.e. 47 performances of *Carmen*, by Bizet) at 4.63*IQR above Q_3; 1 (i.e. 43 performances of *Madama Butterfly,* by Puccini) at 4.13*IQR above Q_3; 1 (i.e. 42 performances of *Manon Lescaut*, by Puccini) at 4.0*IQR above Q_3; 1 (i.e. 41 performances of *Lucia di Lammermoor*, by Donizetti) at 3.88*IQR above Q_3; 1 (i.e. 36 performances of *Nabucco*, by Verdi) at 3.25*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with $p_1 = 0.05$ and $p_2 = 0.01$, there is 1 outlier with ODV=78.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2016-2017 the title performances are not normally distributed (with σ = 15.1, IQR = 8 < 20.4).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2017-2018	1	2	4	8	17

In 2017-2018, 20 titles were performed just once: e.g. *Il turco in Italia*, by Rossini; the maximum is 17 title performances (1 title: *L'italiana in Algeri*, by Rossini), the median (Q_2) is 4 title performances (17 titles: e.g. *La metamorfosi di Pasquale,* by Spontini) and, from 2 (Q_1, first quartile; 27 titles: e.g. *Il re*, by Giordano) to 8 (Q_3, third quartile; 8 titles: e.g. *Il pirata,* by Bellini) title performances, the IQR (InterQuartile Range, $Q_3 - Q_1$) = 6. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.33. There are 22 values of title performances as outliers: among them, 1 (i.e. 146 title performances of *La traviata*, by Verdi) at 23.0*IQR above Q_3; 1 (i.e. 69 performances of *Carmen,* by Bizet) at 10.17*IQR above Q_3; 1 (i.e. 64 performances of *Tosca*, by Puccini) at 9.33*IQR above Q_3; 1 (i.e. 61 performances of *Aida,* by Verdi) at 8.83*IQR above Q_3; 1 (i.e. 59 performances of *La bohème,* by Puccini) at 8.5*IQR above Q_3; 1 (i.e. 49 performances of *Il barbiere di Siviglia*, by Rossini) at 6.83*IQR above Q_3; 1 (i.e. 48 performances of *Madama Butterfly*, by Puccini) at 6.67*IQR above Q_3; 2 (i.e. 40 performances of *Rigoletto,* by Verdi and *Cavalleria rusticana*, by Mascagni) at 5.33*IQR above Q_3; 1 (i.e. 34 performances of *La prova di un'opera seria*, by Gnecco) at 4.33*IQR above Q_3; 1 (i.e. 32 performances of *L'elisir d'amore*, by Donizetti) at 4.0*IQR above Q_3; 1 (i.e. 31 performances of *Le nozze di Figaro*, by Mozart) at 3.83*IQR above Q_3; 2 (i.e. 29 performances of *Il trovatore*, by Verdi and *Don Giovanni,* by Mozart) at 3.5*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with $p_1 = 0.05$ and $p_2 = 0.01$, there is 1 outlier with ODV=71.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2017-2018 the title performances are not normally distributed (with σ = 16.1, IQR = 6 < 21.8).

SEASON	MIN	Q1	MEDIAN = Q2	Q3	MAX
2018-2019	1	2	5	10	20

In 2018-2019, 15 titles were performed just once: e.g. *Il maestro di musica*, by Pergolesi; the maximum is 20 title performances (1 title: *L'italiana in Algeri*, by Rossini), the median (Q_2) is 5 title performances (15 titles: e.g. *Il re pastore,* by Mozart) and, from 2 (Q_1, first quartile; 28 titles: e.g. *Sì*, by Mascagni) to 10 (Q_3, third quartile; 4 titles: e.g. *Otello,* by Verdi) title performances, the IQR (InterQuartile Range, $Q_3 - Q_1$) = 8. As for the above mentioned quantile definition of skewness, bounded in the interval [-1, 1], it measures +0.25. There are 20 values of title performances as outliers: among them, 1 (i.e. 171 title performances of *La traviata*, by Verdi) at 20.13*IQR above Q_3; 1 (i.e. 80 performances of *Rigoletto,* by Verdi) at 8.75*IQR above Q_3; 1 (i.e. 77 performances of *Tosca*, by Puccini) at 8.38*IQR above Q_3; 1 (i.e. 75 performances of *Il barbiere di Siviglia,* by Rossini) at 8.13*IQR above Q_3; 1 (i.e. 73 performances of *Madama Butterfly,* by Puccini) at 7.88*IQR above Q_3; 2 (i.e. 57 performances of *Turandot*, by Puccini and *Il trovatore*, by Verdi) at 5.88*IQR above Q_3; 1 (i.e. 55 performances of *Aida,* by Verdi) at 5.63*IQR above Q_3; 1 (i.e. 49 performances of *Don Giovanno*, by Mozart) at 4.88*IQR above Q_3; 1 (i.e. 43 performances of *Bastien und Bastienne*, by Mozart) at 4.13*IQR above Q_3; 1 (i.e. 41 performances of *Carmen*, by Bizet) at 3.88*IQR above Q_3; 1 (i.e. 40 performances of *La bohème*, by Puccini) at 3.75*IQR above Q_3; 1 (i.e. 39 performances of *Cavalleria rusticana*, by Mascagni) at 3.63*IQR above Q_3; 1 (i.e. 38 performances of *Gianni Schicchi*, by Puccini) at 3.5*IQR above Q_3; 1 (i.e. 36 performances of *Le nozze di Figaro*, by Mozart) at 3.25*IQR above Q_3.

In accordance with Chebyshev's theorem, as for unimodal distributions, with p_1= 0.05 and p_2=0.01, there is 1 outlier with ODV=90.

Taking into account that data are normally distributed with an IQR = 1.35 σ, where σ is the population standard deviation, it would appear that in 2018-2019 the title performances are not normally distributed (with σ = 19.9, IQR = 8 < 26.9).

3.5 Mood's test for title performances

The following figure shows the title performances (2004-2019) in the four considered countries, side by side.
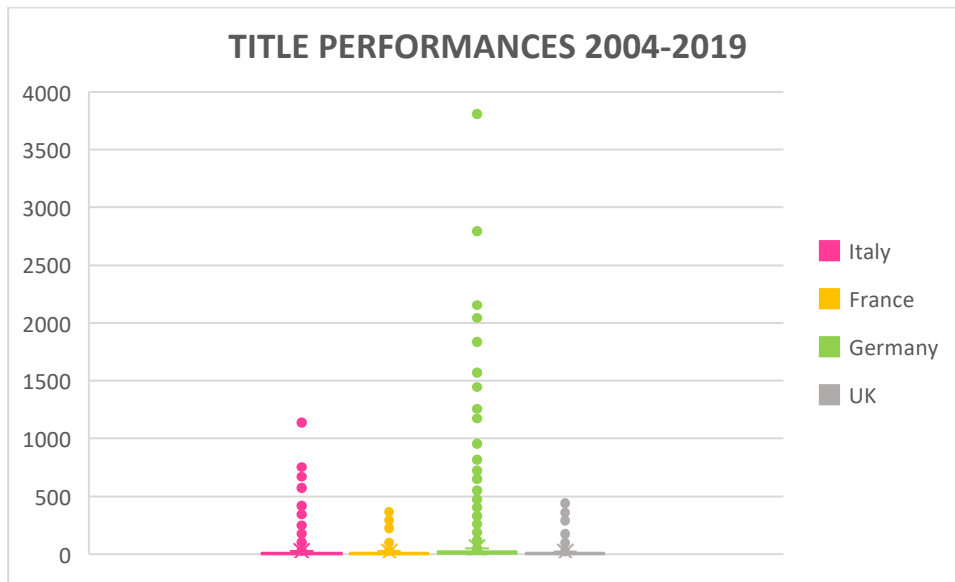
Figure 11 – Title Performances in Italy, France, Germany and the UK (2004-2019)

Applying the Mood's test to the distributions of title performances (2004-2019) in Italy, France, Germany and in the United Kingdom, as shown in table 4, the chi-square value result is 4, with a p-value = 0,26, greater than $\alpha = 0.05$, so the null hypothesis is accepted: the samples are drawn by the same population.

Combined Median	ITALY	FRANCE	GERMANY	UK	
> 6	331	376	977	288	1972
≤ 6	472	524	590	447	2033
	803	900	1567	735	4005

Chi-sq	4,000
p-value ($\alpha = 0.05$)	0,26146413

Table 4 – Mood's stat and test for Title Performances in IT, FR, GE and in the UK (2004-2019)

Applying the Mood's test to the distributions of title performances (2004-2019) in Italy, as shown in table 5, the chi-square value result is 20, with a p-value = 0.13, greater than $\alpha = 0.05$, so the null hypothesis is accepted: the samples are drawn by the same population.

	Combined Median		
SEASON	> 5	≤ 5	Total
2004-2005	80	72	152
2005-2006	67	55	122
2006-2007	70	59	129
2007-2008	80	73	153
2008-2009	67	88	155
2009-2010	61	72	133
2010-2011	67	69	136
2011-2012	64	65	129
2012-2013	65	68	133
2013-2014	61	74	135
2014-2015	75	64	139
2015-2016	72	82	154
2016-2017	74	91	165
2017-2018	71	100	171
2018-2019	75	86	161
Total	1049	1118	2167

Chi-sq	20,000
p-value (α = 0.05)	0,13

Table 5 – Mood's stat and test for Title Performances in Italy (2004-2019)

3.6 Intensive differences of title performances

In the following tables (6 and 7) are mapped the intensive differences that dynamized the morphogenetic processes of opera repertoire programs, in Germany and in Italy, from 2004 to 2019.

227	267	240	217	270	334	253	286	216	254	291	217	226	247	286
					167									104
94													97	
	68	73		89		81	73							
									51					
										40				
	33		38	33				38	33	38		33*2		31
										31				
							30			30				
29					29		27							
											25		25	
						24						24		
		23	23						23					
						22								
							21				21			
							20	20	20*2		20			
					19			19*2				19		19
											18*2			
16			16				16			16				
	15			15*2										
14														
			13				13					13		13
	12*2		12							12		12		
		11				11*3							11	11
10		10		10					10				10	10*2
	9	9	9*2						9		9*2			9
	8	8		8		8	8	9	8				8	
7	7	7	7	7	7*2			8	7	7		7		7
6*2		6*3	6	6	6*3	6*2	6	7*2	6*2	6*2	6*2		6*2	
5*2	5*2	5	5*4	5*3	5*3		5*2	5*2	5	5*2		5	5*2	
4	4	4	4	4*2	4*2	4*4	4*3	4*2	4*3	4*2	4*5	4*5	4	4*2
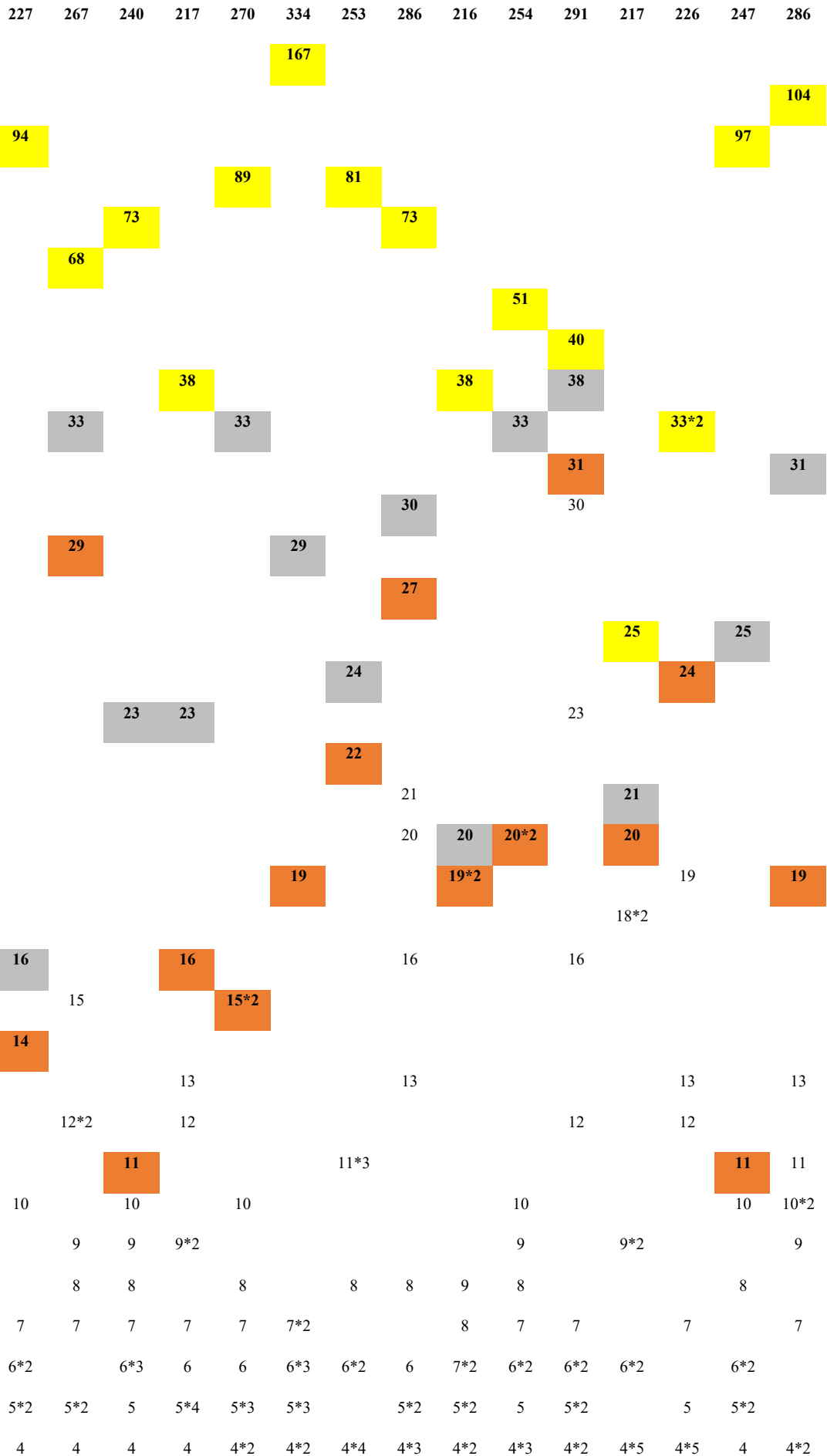
3	3*4	3*4	3*4	3*4	3*3	3*2	3	3*4	3*4	3*3	3*6	3	3*3	3
2*7	2*6	2*10	2*4	2*4	2*7	2*3	2*3	2*12	2*9	2*8	2*5	2*4	2*10	2*10
1*43	1*36	1*40	1*40	1*44	1*41	1*45	1*41	1*35	1*37	1*39	1*37	1*49	1*41	1*41
0*197	0*249	0*247	0*265	0*271	0*282	0*281	0*298	0*275	0*313	0*293	0*295	0*256	0*264	0*267
-4592	-5670	-5749	-5648	-5826	-6128	-5672	-6018	-5897	-6379	-6186	-6071	-5941	-5942	-6043

Table 6 – Intensive Differences of Title Performances in Germany (2004-2019)

64	43	52	57	59	62	71	87	89	64	79	111	101	145	170
														91
													77	
											29	29		
							25							
											22			
						21								
				20										
19														
								17						
														16
								14			14			
										12				
11			11				11	11						
		10			10							10	10	
		9			9					9				
							8	8		8	8	8	8	

	7		7			7			7	7*2				
				6	6	6		6	6	6	6	6	6	6*3
	5												5	5
4	4	4	4*3	4	4		4	4	4*2			4*2	4	4*2
3*2		3	3*2	3	3*3	3*4	3*3	3*7	3*2	3*2	3*3	3*2	3*2	
2*3	2	2*2	2*2	2*3	2*4	2*3	2*5	2*3	2*2	2*3	2*2		2*5	2*6
1*18	1*25	1*25	1*20	1*17	1*22	1*22	1*17	1*14	1*18	1*18	1*22	1*26	1*19	1*19
0*125	0*92	0*98	0*124	0*129	0*101	0*104	0*98	0*106	0*103	0*109	0*122	0*128	0*138	0*126
-1250	-1178	-1172	-1260	-1149	-1217	-1231	-1337	-1280	-1313	-1496	-1529	-1696	-1635	-1834

Table 7 – Intensive Differences of Title Performances in Italy (2004-2019)

Season by season, the color coding is the following: in green are the values of the total intensive differences that energized the morphogenetic processes; the three first values of intensive differences are highlighted (akin to gold, silver and bronze medal); the intensive difference values under the third are in black (multiplied by their occurrences if more than once); in red is the differential value of the last title performance listed (1 performance) as a reference that records the total opera performances in the considered seasons (that is, e.g., in 2004-2005 in Germany there were 4593 opera performances).

4. Discussion

4.1 Outliers in non-random sampling and non-independent samples

SEASON	ODV	OUTLIERS
2004-2005	54	1
2005-2006	77	0
2006-2007	55	0
2007-2008	56	1
2008-2009	45	1
2009-2010	70	0
2010-2011	72	1
2011-2012	82	1
2012-2013	72	2
2013-2014	76	0
2014-2015	69	2
2015-2016	78	2
2016-2017	78	1
2017-2018	71	1
2018-2019	90	1

Table 8 – Outliers with ODV in Italy (2004-2019)

Having non-random samples requires really great care in proposing any results.

The writing of a thesis is an actual problem, where <<the virtual possesses the reality of a task to be performed or a problem to be solved: it is the problem which orientates, conditions and engenders solutions, but these do not resemble the conditions of the problem.>>[200]

To say it differently, quoting Bent Meier Sørensen, Prof. at the Department of Management, Politics and Philosophy of the Copenhagen Business School, it occurs some <<defocusing the problem in order to 'produce the problematic'…the ability to produce the problematic of a given problem, instead of just solving it…thinking itself is a practice.>>[201]

So, on the non-random sampling of title performances and the statistical significance of any relevant hypothesis testing, I am aware that the randomness of sampling has a purpose: to reduce the probability of biased results in the testing itself, in order to give some meaningfulness to the testing.

The convenience, purposive sampling in this thesis is accepted as a methodological decision for this research question, because it shall not infer from the samples to the population in statistical terms for its conclusions, being at stake the validity of the inference.

The convenience, purposive sampling in this thesis cannot be said to have missed something because of its non-randomness: as a matter of fact, its non-randomness is due to the actual processes that select an opera title for the actual programming, that are non-chance, non-random processes.

It cannot be said that any subjective judgement biased the sampling taken from the mentioned site "Operabase", it being understood the correctness of the recorded and available data, and of course of their treatment.

The convenience, purposive sampling in this thesis captures the results of decision-making processes, which are of interest for the purposes of this thesis, specifically in order to address the framing as a first, critical step in any decision-making process.

As for the independence of the considered title performances samples, i.e. no title of one sample can be used to determine a title of another sample, in this thesis not only it is acknowledged the flow of imitation as a social driver, but it is also stated above that La Fenice's repertory choice was faithful to the list of the ten most performed titles in the world in 2013-2014, with the exception (to be readily integrated by La Fenice's production in 2015) of *Die Zauberflöte*.

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[200] Deleuze, G. (1968), p.212.

[201] Sørensen, B.M. (2005). *Immaculate defecation: Gilles Deleuze and Félix Guattari in organization theory*. The Editorial Board of the Sociological Review. Published by Blackwell Publishing Ltd, 9600 Garsington Road, Oxford OX4 2DQ, UK and 350 Main Street, Malden, MA 02148, USA, at https://doi.org/10.1111/j.1467-954X.2005.00545.x , p.125-127.

Therefore, again, for the purposes of this research, the interest in the actual opera repertoire programs suggests to try the Mood's test, in order to have maybe some hint, if not as for the statistical significance, at least as for the meaning of some outliers.

In the considered 15 seasons, *La Traviata* by Verdi totaled: in France, 356 performances; in Germany, 2074; in the UK, 399; and in Italy, 1139 performances (102.36*IQR above Q_3), ranging in the four countries from 31.18*IQR to 120.71*IQR above Q_3.

Taking into consideration that for John Tukey, who introduced the box and whiskers plots, an extreme outlier is at 3*IQR above Q_3, notwithstanding the assumptions that undermine the significance of such statistical description in the case of the considered title performances samples, definitely there is something going on, not only at La Fenice as recalled above by Trevisan, (…<<I naively asked to my colleague: "Why did you start performing the same productions so many times?". Her reply was: "Don't you have a master in management?". "Yes, I have", I said. "Then you should realize it by yourself!", she concluded.>>[202]), but also in the four considered countries, throughout 15 seasons.

In accordance with Chebyshev's theorem, outliers in the overall title performances in 15 seasons are detected only in Germany and in Italy, the two countries with the highest number of opera performances, respectively 87,777 for 1,567 titles performed and 20,592 performances for 803 titles (in France, 15,382 opera performances for 900 titles, and in the United Kingdom, 12,623 performances for 735 titles).

That is interesting, because in Germany prevails, according to Trevisan's accounting above, the repertory production strategy, due to the availability of permanent company of singers, performing different titles, in opera houses.

Such production strategy, that has impact on the opera repertoire programming, differs from the "stagione" system, i.e. the staging of new or guest productions in each theatrical season.

In the narrated success story of a managerial turn at La Fenice, starting from 2009, it is indeed the implementation of a semi-repertory strategy, by means of revivals of performances of some titles, that in Italy led to *La traviata* by Verdi as a steady outlier (table 9).

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[202] Idem, p.6.

SEASON	ODV	*La traviata*'s Performances
2014-2015	69	80
2015-2016	78	112
2016-2017	78	102
2017-2018	71	146
2018-2019	90	171

Table 9 – *La traviata* outlier with ODV in Italy (2014-2019)

Taking into consideration the above outlined theoretical frame, I claim that this happened by difference and repetition, i.e. imitation, with a view to the alignment pinpointed above, as for La Fenice's repertoire, with the world ten most performed titles in 2015.

Anyway, the point of this thesis does not argue the effectiveness of the narrated managerial turn but, dealing with the question of framing as for decision-making processes, points out that the outlying of some titles, always with respect to the inlying of some others in a considered distribution, does not come from any turn.

It is a morphogenetic feature in the process that actualizes opera repertoire programs.

4.2 Mapping a distribution of frequencies

Problems do not vanish behind their solutions and a well-posed problem is defined by << correctly grasping the objective distribution *of the singular and the ordinary.*>>[203]

The above reported "Intensive Differences of Title Performances" tables (6 and 7) are the proposed visualization of the intensive differences that, from within the process and without a supplementary dimension, that imposes an extrinsically coordinatization or a defined unity, show the virtual programs that resulted in the considered actual programs, the difference between a given diversity of titles.

They try to map the virtual space exhibiting the regularities of the morphogenetic processes that resulted in the actual opera repertoire programs.

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[203] De Landa, M. (2002), p.116.

Such a mapping operation, in my understanding, deals with opera repertoire programs, neither as individual nor as groups, but as a multiplicity of individuation of opera repertoire programs and their grouping, for a dynamization of the observation relevant to their processual morphogenesis.

Such a mapping operation aims at showing the singularities-attractors, one may call them the outliers in a different narration, that constitute the trajectories of the programs, the process disguised under the resulting product.

There are indeed virtual title-singularities that by means of differential intensities (e.g., the value 19 in Italy, in 2004-2005, could be actualized as 89 performances of a title with respect to the 70 performances of the following most performed title) that structure actual programs: in Italy, in 2004-2005, actually there were 65 performances of *La bohème* by Puccini, followed by 46 performances of *La Traviata*, by Verdi.

As stated above (§1.6.1), out of the constraints of resemblance as a process and of identity as a principle, since actualization is differentiation, between the possible and the real, there is the way offered by accounting the genesis, the individuation process that links virtual multiplicities and actual structures; with Deleuze: <<"Actual terms never resemble the singularities they incarnate…For a potential or virtual object to be actualized is to create divergent lines which correspond to – without resembling – a virtual multiplicity.>>[204]

From tables 6 and 7, we may appreciate that in Germany, from 2004 to 2019, the overall intensive differences that energize the opera repertoire programs vary from a minimum value, min=216, to a maximum, max=291, showing a spread value of 75 (incremental range of 35 %).

If we consider the sum of the total intensive differences that are below the three highest reported values (min=103, max=182, spread of 79, incremental range of 77 %) and those of the three highest reported values (min=66, max=215, spread of 149, incremental range of 226 %) we may appreciate that some singularities configure a trajectory of programs towards them.

In Italy, the overall intensive differences that energize the opera repertoire programs vary from a minimum value, min=43, to a maximum, max=170, showing a spread value of 127 (incremental range of 295 %).

If we consider the sum of the total intensive differences that are below the three highest reported values (min=27, max=57, spread of 30, incremental range of 111 %) and those of the three highest reported values (min=66, max=215, spread of 149, incremental range of 606 %), we may well appreciate that some singularities configure a trajectory of programs towards them.

The variation of incremental differences as for 1) the overall intensive differences, 2) the total intensive differences below the three highest ones, and 3) the sum of the three highest ones, recorded in 15 seasons, are shown below in table 10.

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[204] De Landa, M. (2002), p.41.

Intensive Differences' Variability (2004-2019)	Increment - GE	Increment-IT
Overall intensive differences	35%	295%
Total intensive differences below the three highest ones	77%	111%
Sum of the three highest ones	226%	606%

Table 10 – Intensive Differences' Variability in Germany and in Italy (2014-2019)

4.3 Invariance under transformation of opera repertoire programs

The triviality of recognizing that there are opera titles that are much more performed of others should not, in my understanding, disguise the main point.

I recalled above Trevisan's narration, in accordance with an opera house chief executive statement: <<The clear message is that La Traviata "pays" other operas, and without performing it there will not be enough resources to build-up other new productions.>>[205]

It appears that it is not a matter of *La Traviata*, since in Italy the outlier in 2004-2005, long before any managerial turn narration, it was *La bohème*, in 2007-2008 it was *Tosca*, in 2008-2009 it was *Aida*.

What happened to *La Traviata* performances is the imitation, repetition and difference, of a morphogenetic process configuring trajectories of programs attracted by a singularity.

Discourses in managerialese, the use of managerial concepts and the related vocabulary, may provide the relevant explanations, that notwithstanding their objectiveness, still are forms of narration.

A relative invariance under transformation throughout 15 seasons of opera repertoire programming was shown above.

Paraphrasing De Landa, opera repertoire programs can be considered as <<equilibrium structures which emerge from a process driven by intensive gradients>>, that is <<differences in intensity, though not in quality>>,[206] the spontaneous tendency of its titles to minimize, or maximize, or optimize an intensive difference.

<<Difference is not diversity. Diversity is given>>,[207] so: the titles are diverse in an opera repertoire program and difference is that by which their diversity is given in a program.

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[205] Trevisan, P. (2016), p.85.

[206] De Landa, M. (2002), p.60.

[207] Idem, p.61.

Intensive gradients are measured not only by rates of change, percentages of incremental representation of titles but also by incremental differences, and the fluxes of performances that these differences drive are the variations of titles among the population of titles.[208]

It shall be pointed out that << the differential relations defining multiplicities cannot involve the asymmetry between dependent and independent variables (or input and output)…the relation is not a rate of change of one quantity relative to another, but the rate at which two quantities change relative to each other. As Deleuze puts it, virtual relations must involve a purely reciprocal determination between their elements, a reciprocal synthesis between pure changes or differences which should not presuppose any prior individuation.>>[209]

An operas title program <<may exhibit attractors and thus be defined in part by the tendencies with which these singularities endow it…>>.[210]

<<Only during the difference-driven process can the equilibrium state be seen as a virtual attractor, a state which is not actualized yet but which is nevertheless real since it is actively attracting the successive states of the system towards itself.>>[211]

Taking into account the disguising of a process under its product, both an ontology of processes and a relevant epistemology of problems foster a betterment of the framing practice in decision-making.

4.4 On structuring the randomness of opera title performances

Let me try now to address the skewness of the observed distributions of opera title performances.

In his article, titled *The Innovation Lottery*,[212] the economist Frederic Michael Scherer addresses the <<size distribution of rewards realized by individuals and organizations>>[213] carrying out innovation, not only in the technical domain but also in the cultural one, so that <<the success of classical music composers, tallied not in lifetime financial rewards but in the attention posterity has paid them, also appears to follow a skew distribution.>>[214]

The skewness of rewards, as the size of opera title performances in opera repertoire programming appears rewarding, <<exhibit ill-behaved sampling properties…in their non-conformity to the law of large

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[208] Ibidem.

[209] Idem, p.71.

[210] De Landa (2002), p.62.

[211] Idem, p.65.

[212] Scherer, F.M. *The Innovation Lottery*, in *Expanding the Boundaries of Intellectual Property. Innovation Policy for the Knowledge society*, edited by Cooper Dreyfuss, R, Leenheer Zimmerman, D. and First, H. (2001). Oxford University Press, p.3-21.

[213] Idem, p.3.

[214] Idem, p.13.

numbers>>,[215] so that <<atrophied operation of the law of large numbers makes it hard to diversify away random sampling variability>>.[216]

The economist Joseph A. Shumpeter in 1942, as recalled by Scherer, predicted that "spectacular winners" would prevail on a large majority of contenders as for the rewards of their efforts, an unjust inequality, that according to Shumpeter, would motivate innovation with an efficacy that no justice would guarantee.

Such an hypothesis, innovation driven by <<large payoffs at low odds>>,[217] leads to distinguish between the aspect of risk related to the variance of a statistical distribution and the aspect related to the skewness, which <<measures asymmetries associated with very long tails on one side of the distribution>>.[218]

It appears that the discovery of bettors who are skewness-loving and variance-averse entails consistency with an utility function shape describing buying insurance and betting lotteries, as proposed by Scherer.[219]

So, for the purposes of this thesis, one could consider the hypothesis that innovation in opera repertoire programming appears to be skew-distributed arguing that decision-makers, motivated employed inventors, as for opera repertoire programming are skewness lovers in the risk-taking of programming.

The point is that the skewness evidence of opera title performances in this thesis could not and cannot be *ex ante*, but only *ex post* opera programming and performing: for the purposes of testing such an hypothesis, how to measure empirically the *ex ante* skewness potential of opera title performances?

Moreover, in my understanding, by dialoging with other authorial voices and interpolating the matter at subject, the log normal distribution that Scherer considers to provide a better fit, than the Paretian one, as for the rewards skewness phenomenon,

still suffers the <<application of the ludic fallacy to randomness>>,[220] related to the Gaussian, bell curve.

What randomness would be applicable to opera title performances?

To treat <<the extreme event as a starting point and not treat it as exception>>,[221] would not only imply a structure of randomness in the empirical reality of opera title performances, but would also not address the outliers as subordinated: the arbitrariness of the size of an opera title performances should tell us that there is a probability that, though never happened before, a greater number of performances of an opera title is possible.

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[215] Scherer, F.M., (2001), p.7.

[216] Idem, p.9.

[217] Idem, p.18.

[218] Ibidem.

[219] Idem, p.17-18.

[220] Taleb, N.N. (2010). *The Black Swan. The Impact of the HIGHLY IMPROBABLE.* New York: Random House Trade Paperback, p. 303.

[221] Taleb, N.N. (2010), p. XXXII.

Such arbitrariness appears as a matter of affinity of trajectories, configured by singularities-attractors, and it should not be dealt as aleatory, thus applying the above mentioned ludic approach to randomness, but as fortuitous.[222]

The randomness of the distribution of opera title performances will not average out, it disobeys the law of large numbers: <<as your sample size increases, the observed average will present itself with less and less dispersion…uncertainty vanishes under averaging. This illustrates the hackneyed "law of large numbers".>>[223]

Such a law cannot be considered a property of the artistic and social event at subject, i.e. the opera repertoire programming, where dispersion matters, still paraphrasing and interpolating the eclectic scholar Nassim Nicholas Taleb, because more linked to the variance of the process, not because linked to its mean.[224]

As for decision-making, Opera Houses are environments where outliers can be delivered, where <<very large deviations are possible, or even likely.>>[225]

Following, in my understanding, Taleb's line of reasoning, I cope with, as an a priori assumption, a lack of structure of opera title performances randomness.

Such lack of structure of the considered randomness, be the randomness due to the knowledge limits of a particular observer, that is epistemic, or be it ontological uncertainty of the processes, <<prone to path dependency>>,[226] imposed me to work with the historical data of opera repertoire programming, from 2004 to 2019.

In order not to <<travel the road between representation and reality in the wrong direction>>,[227] I tried to avoid the fallacious trap of seeking an explanation as for the observed distribution, looking for a "generator" of reality.[228]

There is <<no headwind to slow [opera titles] down>>,[229] to slow *La Traviata* in getting less performed, as there is no headwind to slow inequality, to slow the rich from getting richer.

As for the distribution of wealth, in accordance to the log normal distribution considered above by Scherer, <<if your wealth is at 100 you will vary by 1, but when your wealth is at 1,000, you will vary by 10. The

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[222] Idem, 272-273.

[223] Idem, p.238.

[224] Idem, p.388.

[225] Idem, p. 363.

[226] Idem, p.344.

[227] Idem, p.269.

[228] Idem, p.270.

[229] Taleb, N.N. (2010), p. 233.

relative changes in your wealth are Gaussian…So the lognormal …may tolerate some large deviations, but…they rapidly taper off at the end. The introduction of the lognormal was a bad compromise, but a way to conceal the flaws of the Gaussian.>>[230]

Taleb pinpoints that <<the Gaussian-bell curve variations face a headwind that makes probabilities drop at a faster and faster rate as you move away from the mean>>,[231] but paraphrasing, technically you cannot sell performances of the same opera title to more than the <<denizens of the planet - but that upper limit is large enough to be treated as if it didn't exist.>>[232] Furthermore, by repackaging, by offering different interpretations, by revivals of the same opera, <<you might be able to sell it to a person twice, or get that person to watch the same [opera] several times>>,[233]being understood that an opera title performance is not a movie, but a live performance.

It appears to be no restriction, no headwind, no scaling to "sigmas" (σ as a unit of measurement), no ludic fallacy of the law of large numbers in the randomness of opera repertoire programming.

4.5 On the virtuality of opera repertoire programs

Following De Landa's ontological and epistemological reasoning, opera repertoire programs appear as the result of individuation processes, singular cases in fact actualized, that show productive causes.

An essentialist ontology and its relevant epistemology may conceal the productive power of intensive differences behind static categories, e.g. quality.

Linguistic statements should preserve the dynamism of the intensive differences.

It is not a matter of describing regularities, but to secure the mechanism-independent reality of the most performed titles.

A well-posed question, that makes it answerable, has the distribution of the relevant and the irrelevant among its conditions, that appear as problematic.[234]

A question of explanation should have the form "why such limited increment of intensive differences below the first three occurred in Italy?", a question that should have a contrast space, as opposed to the occurred event: <<the relevancy and validity of an explanation is relative to a particular contrast space. These spaces

[230] Idem, p.396.

[231] Idem, p.234.

[232] Ibidem.

[233] Ibidem.

[234] Idem, p.129.

capture both what is presupposed in a question…and hence considered to be not in need of explanation, as well as the relevant explanatory alternatives.>>[235]

Is it relevant to state that the first three titles "pay" the others?

My contrast space of questioning is towards a framing for the decision-making as for opera repertoire programs, as an instance of framing in decision-making.

It occurs to characterize the contrast spaces as state spaces, a parametrization of the states of a system, <<a display of its repertoire.>>[236]

To deal with state spaces in morphogenetic processes is not to deal with the notion of possibilities, which does not break off with essentialism.

Taking into account, as an exemplification, the narration of the managerial turn at La Fenice, it proposes a population of parasite titles parasitizing a few, that become ever more parasitized in order to let the population of parasite titles grow: such a coupling of parasite and parasitized titles demands indeed an explanation.

In accordance with a problematic approach, that is not a deductive-nomological model of explanation, <<problems are defined by their presuppositions (what is not being explained) as well as by their contrast spaces (defining what the relevant options for explanation are)…*a problem may gradually specify itself* as the different contrast spaces it contains reveal themselves.>>[237]

The interaction of opera titles among their population finds, or manages, its way to a point of intensive differences explicating itself.

An intimate relation appears between the epistemological problem, posed by researchers, and the ontological problem of opera repertoire programming, that ontologically, in line with Deleuze, is a self-posed virtual problem.[238]

It looks a tired and naïve view the one of producing statements mirroring reality and, in my understanding, as for opera repertoire programming, the condition of the problem appears to have become: the title that "pays" the others.

If one can give an interpretation of the fact that only old things come out of change, e.g. because of difference and repetition, i.e. imitation, nevertheless effects should not preexist their causes.[239]

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[235] Idem, p.130.

[236] Ibidem.

[237] De Landa (2002), p.134-135.

[238] Idem, p.135.

[239] Idem, p.155.

Trevisan's account, e.g., stresses the solution to the problem, the trajectories actualized, not the singularities, inherent tendencies, that attracts them.

These are, in my understanding, isomorphic to the condition to be correctly addressed, i.e. the processual inherent tendencies, in order both to avoid the subordination of problems to solutions and to keep problematic the problem,[240] particularly the one of framing in decision-making for the purposes of this thesis.

As for the subordination of problems to solutions, the contrast space, to be taken care of, deals with non-linguistic and extra-propositional facets of the conditions of problems, that are not propositions.

A well-posed problem is not a question of solvability.

The solving of a virtual problem by individuation processes appears as an explication, rather than an explanation.

An explanation is meant to say something about what happens, but explaining what and where is not explaining why.

Moreover, explaining as a speech-act is not answering the relevant why-question, the why-interrogative, that is always context-sensitive, i.e. contrastive, in the sense of forming or consisting of a contrast space: it occurs to make explicit, or better, to explicate the contrast space.

Explication refers << to the cancelling out of intensive differences during a process of individuation, the hiding of intensity under the extensities and qualities it gives rise to.>> [241]

A reversal of the traditional problem-solution relation bears light on the virtual and frees from << the illusion that the actual world is all that must be explained.>>[242]

Why those inherent tendencies, in the behavior of all solutions, of opera repertoire programs?

Opera repertoire programs as results of individuation, historical causal processes, have an actual and a virtual history, reciprocally interacting, defining << an objective realm of virtual problems of which each actualized individual is but a specific solution…with Deleuze's own words, <<it is correct to represent a double series of events which develop in two planes, echoing without resembling each other: real events on the level of the engendered solutions, and ideal events embedded in the conditions of the problem>>.[243]

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[240] Idem, p.136.

[241] De Landa (2002), p.156.

[242] Idem, p.154.

[243] Idem, p.156.

4.6 On a design of framing in decision-making

De Landa remarks, << As Deleuze writes, "Learning is the appropriate name for the subjective acts carried out when one is confronted with the objectivity of a problem . . . whereas knowledge designates only the generality of concepts or the calm possession of a rule enabling solutions.">>[244]

It is worth seeking the design of framing, taking into consideration the processes as morphogenetic, mapping a distribution of intensive differences, whose critical thresholds trigger events that configure singularities entailing trajectories, actualized by the product of the process.

Framing, as a step in the problematic decision-making process, appears as a problem in itself.

The problematization implied in the decision-making entails conceptualization, because concepts are of consequence, that is they do matter if they are supposed to do something.

Thus, original terms should be conceived for the framing, in order not to look for its truth with reference to its solutions, but for its constitutive fruitfulness.

Be it for the purposes of inquiry, consideration or problems' solutions, the power to decide is akin to the power of questioning.

It is not a matter of mistakes in deciding an opera repertoire program, as if a successful programming were the problem, in order to avoid false solutions.

A not well-posed problem, that is a false problem, may drive us in a somehow illusional accounting of reality, a condition entailed by the falsity of the problem.

But one breaks free from such an illusion not by ascertaining the mentioned falseness, one needs a new problematization, that is a new framing.

The decision-making process for the definition of an opera repertoire program appears as a well-posed problem if it continues to stand up to examination neither beyond nor regardless the solutions, but <<through all the solutions.>>[245]

<<A problem does not exist, apart from its solutions…it insists and persist in these solutions. A problem is determined at the same time as it is solved, but its determination is not the same as its solution: the two elements differ in kind, the determination amounting to the genesis of the concomitant solution.>>[246]

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[244] Idem, p.144.

[245] Treppiedi, F. (2015) *Il problema dell'immagine del pensiero in Deleuze.* In www.filosofia.it, ISSN 1711-9782, at https://www.academia.edu/2327603/Il_problema_dellimmagine_del_pensiero_in_Deleuze_more , my translation, p.8.

[246] Deleuze, G. (1968) *Difference and Repetition*, English translation by Patton, P. (1994). New York: Columbia University Press, p.163.

The genesis of the concomitant (to the determination of a problem) solution appears, in my understanding, also as the framing of the decision-making process.

Following the philosopher Fabio Treppiedi's line of reasoning,[247] it is crucial to consider not only the relation between a problem and a solution but also the "vicious circle", the misstep that transfers, e.g., the success of a managerial turn, its truthfulness, as a solution to a managerial problem, to the truthfulness of the problem, that consequently appears to be linked to the possibilities of its solutions.

Not only the decision-making is problematic, but also the first step in decision-making, i.e. the framing, is a problem.

The framing is the positing of choices available, where the choices are the solutions of the problem of framing,

The determination of framing as a problem is the genesis of the concomitant solution, that fixes, posits a limit to the available choices, thus entailing a not available outside.

Is such limit a border or a barrier? What is the relation between the outside of the framing and the framed? Is the outside negated, neglected?

Between a problem, e.g. the framing, and a solution, e.g. the choices framed, there is mutual relationship.

What is framed does not exist independently of the framing. The framed choices (the solution framing) do not exist independently of the choices' framing (the problem framed).

In order to avoid the misstep entailing the missing of the generative power of a problem, one should not think the problem starting from the possibilities of solving it.

The framing should not simply aim at framed choices to choose among, but it should aim at its problematizing.

In order to consider the framing in a decision-making process as a problem outside of the framed choices, that is independently of the choices' framing, one should interpret the above mentioned limit of the framed/framing: is it a border or a barrier?

The framing of choices (as problem) should be considered from the outside of the choices framed (as solution) so the above outlined limit shall not be simply a forbidding barrier, but a border, that takes into consideration the outside of the framed choices.

Performing in Italy 171 times *La Traviata* in the season 2018-2019, i.e. 91 times (intensive difference) more than the 80 performances of *Rigoletto* in the same period of time, does not appear as a managerial turn effect, capable of understanding the problematization of the framing in an opera repertoire programming as a decision-making process: it conceives the framing of the choices framed simply emphasizing what where the framed choices before the narrated managerial turn.

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[247] Treppiedi, F. (2015), p.9-

As a matter of fact, since 2004, there always have been opera titles super-performed, acknowledged in this thesis as singularities-attractors that constitute the trajectories of opera repertoire programs.

According to De Landa, <<Deleuze stresses the role of correctly posed problems, rather than their true solutions, a problem being well posed if it captures an objective distribution of the important and the unimportant, or more mathematically, of *the singular and the ordinary*.>>[248]

Following Sørensen's argumentation: <<The problematic, argues Deleuze, must always be regarded as prior to the 'solution', which is a category of the already closed case. Solutions belong to the categories of being, truth and the real, in themselves markers of a certain history of philosophy>>[249]

The framing as a problem should maintain its problematical aspect, it should become methodologically an event, it should be expressed as an event, entailing a sense.

<< This, says Deleuze, forces the solution to always have: the truth it deserves according to the problem to which it is a response, and the problem always to have the solution it deserves in proportion to its own truth or falsity – in other words, in proportion to its sense.>>[250]

The problematic offers the process of virtualization: if the solution is inscribed in the actual event of the problem, then the relevant problem, <<problem to which it 'is a solution', must be counteractualized into its *virtual* phase, in a perpetual state of becoming, that is, becoming *actualized*.>>[251]

Tarde, in his preface to the first edition of "The Laws of Imitation" writes: << Given certain unknown primordial conditions, existence was, of course, bound to be as it is. But why were these conditions given and no others? There is something irrational here at the bottom of the inevitable… the actual seems to be a mere fragment of the potential.[in the original French text, *le réalisé semble n'être qu'un fragment du réalisable*]>>[252]

With Deleuze, <<The actualization of the virtual…always takes place by difference, divergence or differentiation. Actualization breaks with resemblance no less than it does with identity as a principle. Actual terms never resemble the singularities they incarnate. In this sense, actualization or differentiation is always a genuine creation. It does not result from any pre-existing possibility.>>[253]

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[248] De Landa, M. (2002), p.5.

[249] Sørensen, B.M. (2005), p.126.

[250] Deleuze, G. (1968), p.159.

[251] Sørensen, B.M. (2005), p.126.

[252] Text at: https://archive.org/stream/lawsofimitation00tard/lawsofimitation00tard_djvu.txt .

[253] Deleuze, G. (1968), p.178-179.

It appears as a logic of propensity rather than purpose, a propensity to which conform, a propensity to endorse.[254]

[254] Candea, M. (Editor) (2016). *The Social after Gabriel Tarde: Debates and Assessments* (second edition). London: Routledge, p.261.

5. Conclusion

Framing for decision-making purposes can be defined as the process of framing the available choices in accordance with criteria, interests, calculations, preferences…. When applying this approach, what makes the framing problematic must not be lost.

I have tried to address the problem of framing in decision-making by considering the mutual relationship between the framing of choices and the choices framed. The judgement on the validity of solution, e.g. the success of a managerial turn, should not be transferred to the judgement of the problem, or of the framing itself.

Indeed, every problem has its own solution.

Yet, a well-posed problem is not one with the effective, right, true solution, that would just solve it, making it not a problem anymore.

Consider the problem: is it true that there is no sufficient money for the programming of opera performances? The solution appears simple: let us perform one single opera program, as many times as the audience can tolerate it, in order to have the money for other opera performances.

A well-posed problem does not die when solutions are found, it lives through its solutions.

Because of this, a well-posed framing step in a decision-making process is not the one which posits the effective, right, choices that just solve it, making the framing not a problem anymore.

A well-posed framing does not die when the problem is solved, but lives through its solution: it preserves the framing's capacity of orientating the sense by which we state the truthfulness or the falseness of the solutions.

The supposed spontaneity with which we assume that one can naturally recognize, understand and really conceive what is outside of their mind and reason, cannot avoid that such mind and reason are exposed to an outside environment that radically exceeding and unsettling.

Through this thesis I have tried to taste the freedom of experimenting and critiquing, through a journey of encounters.

Let me quote again, *verbatim* because the repeating that imitates what is identical may well add the difference: <<the notion of value implies a *critical* reversal. On the one hand, values appear or are given as principles: and evaluation presupposes values on the basis of which phenomena are appraised. But, on the other hand and more profoundly, it is values which presuppose evaluations, "perspective of appraisal", from which their own value is derived. The problem of critique is that of the value of values, of the evaluation from which their value arises, thus the problem of their *creation*. Evaluation is defined as the differential element of corresponding

values, an element which is both critical and creative. Evaluations, in essence, are not values but ways of being, modes of existence of those who judge and evaluate, serving as principles for the values on the basis of which they judge. This is why we always have the beliefs, feelings and thoughts we deserve given our way of being or our style of life.>>[255]

The problem of framing in decision-making, of the evaluation of choices in the framing, is both of their critique and of their creation, and no decision-maker can escape from her their own trajectory of existence: each decision-maker shall realize framing through it.

I am still at the very beginning of my own framing investigation.

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[255] Deleuze, G. (1962). *Nietzsche and Philosophy*, English translation by Tomlinson, H. (1983). Columbia University Press, p.1.

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APPENDIX

Opera Title Performances in Italy through Seasons 2004-2019

ITALY	OPERA TITLE PERFORMANCES through SEASONS 2004-2019															SUM
TITLES PERFORMED \ SEASONS	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	15
La traviata	46	36	52	32	23	63	72	50	90	64	80	112	102	146	171	1139
La bohème	65	22	53	39	35	52	36	88	34	50	34	83	63	59	40	753
Tosca	8	35	28	58	38	41	38	52	27	58	73	48	63	64	77	708
Il barbiere di Siviglia	9	43	38	18	16	41	43	43	27	65	66	61	75	51	75	671
Madama Butterfly	35	32	21	54	20	41	28	40	30	53	66	53	43	48	73	637
Aida	35	43	28	30	60	38	25	46	24	54	51	52	32	61	55	634
Rigoletto	22	35	12	26	40	51	51	50	73	31	22	49	50	40	80	632
Carmen	15	21	27	43	38	28	28	77	21	47	39	31	47	69	41	572
Turandot	12	45	23	22	38	22	22	16	24	44	36	16	51	33	57	461
L'elisir d'amore	22	7	9	4	16	54	48	30	16	44	34	61	33	32	31	441
Don Giovanni	26	37	42	4	6	27	16	32	40	11	57	28	13	29	50	418
Nabucco	18	27	19	11	15	32	26	11	59	20	34	34	36	22	24	388
Il trovatore	32	13	10	21	1	20	27	25	24	15	33	11	32	29	57	350
Cavalleria rusticana	12	17	37		21	12	36	21	27	17	34	9	20	40	39	342
Lucia di Lammermoor		20	5	24	14	12	34	12	14	17	25	33	41	25	11	287
Le nozze di Figaro	7	36	10		10		11	43	21	4	24	34	19	31	36	286
Pagliacci	8	10	18	5	34	14	35	15	11	37	15	5	16	13	31	267
La Cenerentola	29	23		9	7	9	25	1	10	8	19	34	22	25	33	254
Die Zauberflöte	4	19	25	9	2		13	19	7	29	13	21	55	18	16	250
Così fan tutte	15	15	7	26	6	9	11	19	17	32	8	17	29	13	16	240
Falstaff	5	17	26	30	4	8		13	12	23	25	22	20	12	12	229
Norma	11	16	12	14	8	15	6	28	7	26	15	21	23	13	2	217
Un ballo in maschera	15	33	7	12		3	6	19	29	16	15	8	33	5	15	216
Don Pasquale	18	5	22	7	20	4	21	16	7	15	18	14	4	15	13	199
Gianni Schicchi	1	5	12	18	9	5	12	16	8	17	14	9	12	14	38	190
Manon Lescaut	3	33	24	23	3	17	10	2		8	1		42	5	9	180
Macbeth	13	6	9	18	2	3	5	7	51	6	6	12	21	3	14	176
L'italiana in Algeri	6		17	5	24	7	11	8	29	9	2	11		17	20	166
Otello	8	6	18	5	5	7			29	33	15	8	6	11	10	161
Andrea Chénier	27	10	8	17	7		1		12	3	13	6	11	11	25	151
Simon Boccanegra	7			8		19			10	17	15	20		25	12	133
La sonnambula	16	12	12	10	7		6	7		5	7	11	11	10	8	122
La serva padrona	15			2		6	19	1	2	5	7	4	12	16	26	115
Attila	9	5	10	5	3		17	10	8	8	7	12	8		11	113

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	Total
Salome	11		15	13		14	14	6			5	4	7	11	5	**105**
Werther	23	3	16	14	8	5			1		8	6	13		5	**102**
Suor Angelica			9	18	1	2	6	1		1	9	18	4	20	8	**97**
Die Entführung aus dem Serail		34		7	5	4	13	3					18	6	1	**91**
Orfeo ed Euridice	3		19	13	2	2	7			10	21			7	6	**90**
Roméo et Juliette	5			14	12	14	31	2	3	3	3			2		**89**
Il turco in Italia	6	14	2	12	9						21	4	17	1		**86**
Don Carlo	8	9		12					18	8			22	5	1	**83**
Tristan und Isolde	11		14	7	6	5			5	4	5	5	12	7		**81**
Hänsel und Gretel	3		8		30	13			2		6	10		8		**80**
I puritani		1			17	7	3	8	3		14	8	7	6	6	**80**
La Fille du régiment	15	2	17		7	11			1		7	2		6	10	**78**
Maria Stuarda		6	3	8	15	18	7		6	4			11			**78**
Ernani	10		12	7	14		7	3	8	7					8	**76**
Il viaggio a Reims	4	2		1	20	6	3	7	2	2	2	4	12	2	9	**76**
La fanciulla del West	11		3	9	2	3	8					9	1	25	2	**73**
La Voix humaine			15			14		3			4	9	10	5	11	**71**
Elektra	8			10		15		5		11		8	5		7	**69**
Idomeneo	5	9				29	2					5	4		14	**68**
Adriana Lecouvreur			11	2	17	5	6				8		9	6	3	**67**
Dido and Aeneas		10	7	6		5			10		5	16	8			**67**
La forza del destino		15	7	6		3	9		1	2	5	13			6	**67**
Faust	12	5	10		2	17	1				7		4	7		**65**
Der fliegende Holländer	8		7		2				27	8				8	4	**64**
Il tabarro			2	18	1	2	7		3	1	5	9	3	11	2	**64**
Anna Bolena	8		7	6				11			7	2	11	4	6	**62**
Die Walküre	5	13	6		2		7		16						12	**61**
La rondine				16	11			3		1	12		2	16		**61**
Les contes d'Hoffmann	11				9		9		7	18					7	**61**
Il matrimonio segreto	10	7		6	2		4		16	7					8	**60**
La scala di seta	10			1	4	2	4			16	7	13			3	**60**
Fidelio	7	6		2	2		4	9	6		10		3	9		**58**
Luisa Miller		5		11		9	3	9		5	10	6				**58**
I Capuleti e i Montecchi		14			5				8	5	14	1	4	6		**57**
La cambiale di matrimonio	2		4				1	3	9	7	2	10	4		14	**56**

L'occasione fa il ladro				3		17	9	5	10		4		7		**55**
Porgy and Bess	12		5	5	3	8		6				9		7	**55**
Il campanello di notte						20	2	12	6			3	2	9	**54**
I masnadieri							5	5	5			22	6	7	**50**
Yevgeny Onegin		8		5	9			8	13				7		**50**
The Turn of the Screw	5	5		11		5		3		7	6		7		**49**
Tancredi	12	6	1			14		1	8					6	**48**
Bastien und Bastienne	2	1												43	**46**
Die Dreigroschenoper	17					5	2	22							**46**
I due Foscari		3		6	7	7		12		2	9				**46**
Il cappello di paglia di Firenze	2		3	6		4	11		6	4		6	4		**46**
Tannhäuser	7					23	11					5			**46**
La clemenza di Tito			4	11	3	5			6	10				4	**43**
La Gioconda	11	8					6	2	9		1		6		**43**
La prova d'un opera seria												34	8		**42**
Les Pêcheurs de perles	2			7		5	3	5	6	3	5	6			**42**
I vespri siciliani	11			6			18			6					**41**
Ariadne auf Naxos	11	9	4			5		3						8	**40**
Le convenienze ed inconvenienze teatrali					2		9	9	14		2	3			**39**
The Rake's Progress	7	3	6	6	7					10					**39**
A Midsummer Night's Dream					6	10		5		1		10	6		**38**
L'Enfant et les sortilèges	3	9		5			1		6	5	8				**37**
A Kékszákallú herceg vára	6		3	11			3			2	6			5	**36**
Il maestro di cappella					1	4	8	5	1	7		2	4	4	**36**
L'incoronazione di Poppea		11					5			11		9			**36**
Peter Grimes	6				5	8		10		3		4			**36**
Boris Godunov	5		10		5		9	6							**35**
Il segreto di Susanna					2		10		5	1	5	6	6		**35**
Das Rheingold		6	4	2		6	5		11						**34**
La gazza ladra				4	8			4				4	14		**34**
Parsifal	11			8			8		1	6					**34**
Der Rosenkavalier				7	6				11			9			**33**
Medea		2		6	17		6						2		**33**

Francesca da Rimini			5	3		10			1		3		9		**31**
Samson et Dalila			6			7		5	2		2	8			**30**
Il corsaro	7			7				6			4		3	2	**29**
Il ritorno d'Ulisse in patria	14			2			6						3	4	**29**
Cherevichki		13								15					**28**
Il signor Bruschino							2	10		9		5	2		**28**
La battaglia di Legnano	6					6	6	5			1		4		**28**
Manon		8	6		7		7								**28**
Rinaldo	11						6						3	8	**28**
Roberto Devereux		3	2	7		5		2			5		4		**28**
Semiramide	8	4	2				5					4		5	**28**
Iris		9	7				5						6		**27**
Pelléas et Mélisande	6	10			7					4					**27**
Pikovaya Dama	12			9						6					**27**
Rusalka		8	6				5			8					**27**
I lombardi alla prima crociata		6	5	5		3							7		**26**
Un giorno di regno					8		6	1				1		10	**26**
Brundibár			2				4	4		6		7	2		**25**
Götterdämmerung				9		3		9			4				**25**
Guillaume Tell			3			2		9		5			6		**25**
L'amico Fritz							6	6		2	11				**25**
La Damnation de Faust			8	5			6						6		**25**
Mosè in Egitto			6				6			5			4	4	**25**
Siegfried			4	4	3		9				5				**25**
Fedora							1			6	6			11	**24**
L'Heure espagnole					5		6	5			8				**24**
La favorite		7		2							5		4	6	**24**
Oedipus rex	6		8	4							6				**24**
Kát'a Kabanová		13										5		5	**23**
Giulio Cesare in Egitto			6			6				10					**22**
Il campiello				4				7		11					**22**
L'orfeo			2	2	8					1			4	5	**22**
La pietra del paragone			5	6								10	1		**22**
Lady Macbeth of Mtsensk			8	3						6			5		**22**
Let's Make an Opera		7	3				1	3			1	1		6	**22**

Lohengrin	3		8		5				6							**22**
Thaïs	8			5	9											**22**
Giovanna d'Arco					6				3			8	4			**21**
Help! Help! The Globolinks!								21								**21**
Stiffelio								5		7		5		4		**21**
Billy Budd	10										5			5		**20**
Die tote Stadt					11										9	**20**
Mefistofele	1		7		7				1			4				**20**
Sancta Susanna			6						4				2	8		**20**
Don Quichotte		7					6		6							**19**
Goyescas											5	14				**19**
Jenůfa			8								6		5			**19**
L'inganno felice									6		4	4		5		**19**
Lucrezia Borgia			15		2					2						**19**
Oberto			12						7							**19**
Wozzeck			12									7				**19**
Edgar	1		9	2	6											**18**
Gisela!											18					**18**
Il prigioniero			6				8			1				3		**18**
Il re pastore		5	2								6				5	**18**
Il Trittico		7	9												2	**18**
La finta semplice	5	1	2						7	3						**18**
I Shardana					2					14					1	**17**
Il giocatore	9												8			**17**
Il paese dei campanelli		2	6		6				2	1						**17**
Le Villi		2	3	2	2										8	**17**
Lucio Silla		5									12					**17**
Maometto II	5				5					7						**17**
The Beggar's Opera		3	10												4	**17**
Trouble in Tahiti			7		8							2				**17**
Vec Makropulos					8			4	5							**17**
Aufstieg und Fall der Stadt Mahagonny	2				8							6				**16**
Der Schauspieldirektor												15		1		**16**
Die sieben Todsünden			7	3	6											**16**

Il castello incantato														16		**16**
Il combattimento di Tancredi e Clorinda					4			5			3		2		2	**16**
Il duello comico														16		**16**
L'olimpiade			5		1		5	2	2					1		**16**
La bella dormente nel bosco	6			2									8			**16**
La Dirindina			4	3								3	1	5		**16**
La finta giardiniera			9												7	**16**
Orlando furioso		2			1				1	1	1	4		5	1	**16**
Pinocchio							2	3		1		7		1	2	**16**
Pollicino							3				5	8				**16**
The Medium					4		7						1	4		**16**
The Rape of Lucretia									16							**16**
Don Checco									1		9				5	**15**
L'oca del Cairo													15			**15**
Le Rossignol								14					1			**15**
Nos			7				3		5							**15**
The Love for Three Oranges	1		5							4					5	**15**
The Telephone						2		3			4		1	5		**15**
Un segreto d'importanza		11	4													**15**
Alceste	4										5		1	4		**14**
Fra Diavolo												2		12		**14**
I cavalieri di Ekebù	7	7														**14**
Il mondo della luna		9			1	1								3		**14**
Lulu						6						2	6			**14**
Napoli milionaria						2	6		6							**14**
Torvaldo e Dorliska			5	5										4		**14**
Amica				2	11											**13**
El amor brujo	2											5	6			**13**
Elegy for Young Lovers		3	5							5						**13**
Elisabetta, regina d'Inghilterra	11											2				**13**
La donna serpente										3		10				**13**
Sakùntala		6												7		**13**

The Cunning Little Vixen						4	4						5				**13**
Acis and Galatea	4							5						1	1	1	**12**
Ascanio in Alba		7	5														**12**
Dialogues des Carmélites											8			4			**12**
Eine florentinische Tragödie						3				9							**12**
I quatro rusteghi		12															**12**
Il Pinocchio (mal)visto dal gatto e la volpe												3	9				**12**
Il viaggio di Roberto											6		6				**12**
Khovanshchina	5															7	**12**
L'isola disabitata	4				2						6						**12**
La donna del lago								7		1			4				**12**
Le comte Ory						4				8							**12**
The Tsar's Bride				7						5							**12**
Z mrtvého domu					6	6											**12**
Alcina					7								4				**11**
Aquagranda													11				**11**
Cendrillon					1						4		2	2	2		**11**
Death in Venice				5			6										**11**
Ettore Majorana														11			**11**
Europa riconosciuta	11																**11**
Il furioso nell'isola di San Domingo										11							**11**
Il pirata			3											8			**11**
La furba e lo sciocco								8							3		**11**
Manfred						10			1								**11**
Palandrana e Zamberlucco									6						5		**11**
Zápisník zmizelého												9			2		**11**
Ali-Baba															10		**10**
Au bois lacté	8				2												**10**
Cassandra		1					7				2						**10**
Demetrio e Polibio							4		6								**10**
Die Frau ohne Schatten						4		6									**10**
Don Gregorio				4	6												**10**
Ehi Giò													6		4		**10**

Iolanta			2									8				**10**
Król Roger		8												2		**10**
La campana sommersa												10				**10**
La straniera													7		3	**10**
La Wally													6	2	2	**10**
Pia de'Tolomei	5													5		**10**
Quartett							6						4			**10**
Rienzi, der letzte der Tribunen									10							**10**
Aci, Galatea e Polifemo					7										2	**9**
Adelson e Salvini													2		7	**9**
Assassinio nella cattedrale			1		8											**9**
Ciro in Babilonia									5				4			**9**
Il marito disperato								9								**9**
La gazzetta		5										4				**9**
La Jura												9				**9**
Matilde di Shabran	5								4							**9**
Powder Her Face						2	2	5								**9**
Prima la musica e poi le parole												2	1		6	**9**
Pulcinella		2										1		2	4	**9**
Serse											3				6	**9**
The Fairy Queen			2	2						3			2			**9**
The Flood		9														**9**
Adelaide di Borgogna			2					5							1	**8**
Arlecchino		2	6													**8**
Che fine ha fatto la piccola Irene?								8								**8**
Delitto e Dovere													5	3		**8**
Der Freischütz														8		**8**
El Retablo de maese Pedro	8															**8**
Il mondo alla rovescia						5							3			**8**
Il Socrate immaginario		5		3												**8**
Juditha Triumphans					1		2				5					**8**
L'histoire du Soldat										1	3		4			**8**
La cantata dei pastori													8			**8**

La cantata e disfida di Don Trastullo								8								**8**
La cena delle beffe												8				**8**
La Ciociara														8		**8**
La fuga in maschera									8							**8**
La grotta di Trofonio												2	6			**8**
La metamorfosi								3		5						**8**
La scuola de' gelosi													8			**8**
Le Roi de Lahore	8															**8**
Linda di Chamounix						2						6				**8**
Lo schiavo															8	**8**
Lupus in fabula						1	7									**8**
Motezuma	2			3	1										2	**8**
Olivo e Pasquale												8				**8**
Pimpinone				3			2								3	**8**
Risorgimento							8									**8**
Serpilla e Bacocco											3		2	3		**8**
Sissy			2			6										**8**
Ugo, conte di Parigi	8															**8**
Zanetto				1				3	2			2				**8**
1984				7												**7**
Adriano in Siria				4		3										**7**
Babbelish												7				**7**
Beatrice di Tenda							7									**7**
Catone in Utica											2	1			4	**7**
Cherubin		7														**7**
Cleopatra		3		4												**7**
Didone abbandonata			3										4			**7**
Die Meistersinger von Nürnberg												7				**7**
Die Vögel		7														**7**
Ercole sul Termodonte		7														**7**
Erwartung			5							2						**7**
Fedra												7				**7**
Fennimore and Gerda						7										**7**
Fierrabras														7		**7**

Guntram	7															**7**
I due timidi							3	2						2		**7**
Il carro e i canti					7											**7**
Il crociato in Egitto			7													**7**
Il diavolo in giardino			7													**7**
Il matrimonio inaspettato				1	6											**7**
Iphigénie en Aulide					7											**7**
L'ape musicale		3											4			**7**
La juive		7														**7**
La notte di un nevrastenico								2	3					2		**7**
La vedova scaltra			7													**7**
Le cinesi												3	4			**7**
Le streghe di Venezia							1					6				**7**
Le Toréador											7					**7**
Lo scoiattolo in gamba												2	5			**7**
María de Buenos Aires				3										1	3	**7**
Oedipe	7															**7**
Satyricon		5													2	**7**
Saül				7												**7**
Semyon Kotko					7											**7**
Siroe re di Persia													4		3	**7**
Tamerlano														7		**7**
Teneke				7												**7**
The Gambler				7												**7**
The Legend of the Invisible City of Kitezh				7												**7**
Tutti in maschera				7												**7**
Vanessa		7														**7**
Violanta						7										**7**
Agrippina						6										**6**
Albert Herring						2						4				**6**
Alfred, Alfred											6					**6**
Aureliano in Palmira							2				4					**6**
Bajazet				4						2						**6**
Benvenuto Cellini												6				**6**
CO2											6					**6**

Cyrano de Bergerac				6												**6**
Das Liebesverbot											6					**6**
Der König Kandaules								6								**6**
Der Vampyr					6											**6**
Die Gezeichneten						6										**6**
Die Soldaten											6					**6**
Divorzio all'italiana									6							**6**
Estaba la Madre	6															**6**
Feuersnot										6						**6**
Fin de partie															6	**6**
Genoveva			6													**6**
Giulietta e Romeo													3	3		**6**
I Was Looking at the Ceiling and then I Saw the Sky												6				**6**
Il dissoluto assolto			6													**6**
Il Flaminio	2					2			1	1						**6**
Il piccolo principe														6		**6**
Il re nudo					6											**6**
Il ritorno di Don Calandrino				6												**6**
Il trionfo di Clelia									6							**6**
L'Africaine										6						**6**
La capinera															6	**6**
La Dafne			3											3		**6**
La Didone			4		2											**6**
La vedova ingegnosa															6	**6**
Le braci											2	4				**6**
Leonore	6															**6**
Les Troyens										6						**6**
Livietta e Tracollo						2						4				**6**
Luci mie traditrici						2						4				**6**
Marc'Antonio e Cleopatra			4						2							**6**
Maria Golovín			6													**6**
Medea in Corinto											6					**6**
Orlando											2	4				**6**
Paride ed Elena				6												**6**

	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12	c13	Total
Persée et Andromède	6													**6**
Prince Igor													6	**6**
Rosmonda d'Inghilterra										6				**6**
Scene dalla vita di Mozart		6												**6**
Scugnizza			6											**6**
Senso					6									**6**
Svanda Dudák								6						**6**
Te Deum							2			4				**6**
The Bassarids									6					**6**
The Greek Passion					6									**6**
Ti vedo, ti sento, mi perdo											6			**6**
Ulisse			6											**6**
Un Maestro e Una Cantante											3	3		**6**
Zenobia in Palmira									6					**6**
Zenobia, regina de' Palmireni											3	3		**6**
A Dog's Heart						5								**5**
A View from the Bridge					5									**5**
Agenzia Matrimoniale									5					**5**
Agnese												5		**5**
Amahl and the Night Visitors		3				2								**5**
Amelia al ballo					5									**5**
Ariane et Barbe-bleue			5											**5**
Aspern							5							**5**
Betly								5						**5**
Bianca e Falliero		5												**5**
Cefalo e Procri											5			**5**
Charodeyka										5				**5**
Daphne	5													**5**
Die glückliche Hand												5		**5**
Die schöne Galathée		5												**5**
Don Chisciotte della Mancia	2								3					**5**
Dorilla in Tempe												5		**5**
Erighetta e Don Chilone												5		**5**
Ermione				5										**5**
Garibaldi en Sicile	5													**5**
Gina										5				**5**

																Totale
Giustino					5												**5**
Gli equivoci nel sembiante								2					3				**5**
Il cordovano	5																**5**
Il killer di parole							5										**5**
Il medico dei pazzi													5				**5**
Il sogno di Scipione															5		**5**
Il trionfo dell'onore												1		4			**5**
Intolleranza 1960							5										**5**
Jérusalem										1				4			**5**
L'amore dei tre re	5																**5**
L'arlesiana	2									2	1						**5**
L'Incoronazione di Dario													5				**5**
L'opera seria	5																**5**
La maschera di Punkitititi				5													**5**
La porta della legge											5						**5**
Le Grand Macabre					5												**5**
Le metamorfosi di Pasquale														4	1		**5**
Les mamelles de Tirésias	3			2													**5**
Mirandolina												5					**5**
Moïse et Pharaon							5										**5**
Morte dell'aria	5																**5**
Motsart i Salieri			2					2						1			**5**
Neues vom Tage				3	2												**5**
Nixon in China				5													**5**
Poliuto							5										**5**
Re Enzo	3												2				**5**
Richard III														5			**5**
Rita								1		1				3			**5**
Sarka						5											**5**
Sette storie per lasciare il mondo										5							**5**
Sigismondo							5										**5**
Signor Goldoni				5													**5**
Szenen aus Goethes Faust				5													**5**
The Consul		5															**5**

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
The Fiery Angel													5	**5**
Von heute auf morgen				5										**5**
Achille in Sciro		2										2		**4**
Adina													4	**4**
Alex Brücke Langer				4										**4**
Alexander Nevsky	3					1								**4**
Alice nel paese delle meraviglie					4									**4**
Apollo et Hyacinthus										4				**4**
Ariodante		3				1								**4**
Armida									4					**4**
Baccanali										4				**4**
Bach Haus											2	2		**4**
De Profundis		4												**4**
Drei Wasserspiele							4							**4**
Falcone e Borsellino						2						2		**4**
Il filosofo di campagna					1			3						**4**
Il Ghetto									4					**4**
Il suono giallo									4					**4**
Jakob Lenz						4								**4**
Jeanne d'Arc au bûcher			1	3										**4**
Julie				4										**4**
L'equivoco stravagante				4										**4**
L'impresario delle Canarie												3	1	**4**
La Cecchina						2						2		**4**
La Muette de Portici							4							**4**
La vera costanza					4									**4**
La virtù de' strali d'Amore				4										**4**
Le chat botté	4													**4**
Le siège de Corinthe												4		**4**
Lou Salomé						4								**4**
Marino Faliero				4										**4**
Miseria e nobiltà												4		**4**
Noye's Fludde								3			1			**4**
Olimpia 2000								4						**4**
Pigmalione	2											2		**4**

																Total
qui non c'e perche										4						**4**
Ricciardo e Zoraide															4	**4**
Salustia					2			2								**4**
Shi													4			**4**
Sosarme	4															**4**
Thamos, König in Ägypten		3												1		**4**
The Servant				2			2									**4**
The Tempest											4					**4**
Vangelo												4				**4**
Written on Skin									3				1			**4**
Zelmira						4										**4**
A Christmas Eve												3				**3**
Amalia!															3	**3**
Andante italiano alla belga									3							**3**
Anne en Zef														3		**3**
Antigone			3													**3**
Anton	3															**3**
Artaserse								3								**3**
Cardillac														3		**3**
Curlew River		2							1							**3**
Dafne											3					**3**
Dannata epicurea	3															**3**
Das Lied von der Erde						1	1		1							**3**
Das verratene Meer						3										**3**
Demofoonte					3											**3**
Dionysos Rising															3	**3**
Doglie										3						**3**
Don Chisciotte									2	1						**3**
Don Falcone					3											**3**
El sombrero de tres picos						3										**3**
Enrico di Borgogna															3	**3**
Euridice e Orfeo										3						**3**
Fammi udire la tua voce														3		**3**
Fida Ninfa	2				1											**3**
Fuga straniera con moto									3							**3**
Grilletta e Porsugnacco										3						**3**

														Totale
Idroscalo Pasolini									3					**3**
Il borgomastro di Saardam												3		**3**
Il castello di Kenilworth													3	**3**
Il colore del sole												3		**3**
Il cuoco				3										**3**
Il fantasma di Canterville	3													**3**
Il maestro di musica							2						1	**3**
Il ritorno dei Chironomidi										3				**3**
Il sequestro				3										**3**
Imeneo							1						2	**3**
Impresario in angustie		1							1			1		**3**
Infinita tenebra di luce												3		**3**
Jackie O			3											**3**
Juliette	3													**3**
King Arthur									2				1	**3**
L'ambizione delusa							3							**3**
L'amor che move il sole e l'altre stelle									1	2				**3**
L'arte e la maniera di affrontare il proprio capo per chiedergli un aumento									1		2			**3**
L'Eritrea								3						**3**
L'osteria di Marechiaro					3									**3**
La bella e la bestia		3												**3**
La favola de' tre gobbi							3							**3**
La finta tedesca										3				**3**
La lotta d'Ercole con Acheloo								3						**3**
La Madama				3										**3**
La nuova Euridice secondo Rilke									3					**3**
La patienza di Socrate con due moglie												3		**3**
La statira													3	**3**
La zingaretta						3								**3**
Lavinia fuggita	3													**3**
Le donne vendicate											3			**3**

Le leggi fondamentali della stupidità umana															3	**3**
Le piccole storie				3												**3**
Lear															3	**3**
Leggenda								3								**3**
Les Noces											1	2				**3**
Lo frate 'nnamorato								3								**3**
Lo sgambetto								3								**3**
Lo stesso mare							3									**3**
Lontano da qui															3	**3**
Mahagonny Songspiel														3		**3**
Margherita d'Anjou													3			**3**
Mozart					3											**3**
Nina													3			**3**
Nûr								3								**3**
Obra Maestra				3												**3**
One Touch of Venus	3															**3**
Opera anthology											1	2				**3**
Parisina	2								1							**3**
Pipa e Barlafuso								3								**3**
Prometeo													3			**3**
Ragaaazziii!								3								**3**
Rosicca e Morano													3			**3**
Scuola di guida						2								1		**3**
Senza sangue													3			**3**
The Embalmer					2			1								**3**
The Gamblers			3													**3**
The Lighthouse			3													**3**
The Tell-tale Heart	3															**3**
The Tyrant								3								**3**
The Water Babies										3						**3**
Titania			3													**3**
Un grido di voce								3								**3**
Volo di notte	3															**3**
Waiting														3		**3**
Y Borges cuenta que				2		1										**3**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
#madreincerta														2		**2**
A Christmas Carol													2			**2**
A Hand of Bridge												2				**2**
Akhnaten												2				**2**
Alidoro				2												**2**
Amor ingegnoso							2									**2**
Anaïs Nin						2										**2**
Arrighetto		2														**2**
Aura													2			**2**
Bacocco e Serpilla															2	**2**
Belisario									2							**2**
Cappuccetto rosso							2									**2**
Carmen, la Gitana									2							**2**
Cecè															2	**2**
Che originali!														2		**2**
Christmas Eve															2	**2**
Colombo		2														**2**
Conversazioni con Chomsky 2.0													2			**2**
Crispino e la comare									2							**2**
Da capo				2												**2**
Das Geheime Königreich							2									**2**
Das Wundertheater		2														**2**
Der Jasager					2											**2**
Der Kaiser von Atlantis												2				**2**
Der Ring des Polykrates							2									**2**
Der Zwerg													2			**2**
Die Antilope														2		**2**
Die Massnahme					2											**2**
Die Meistersingerinnen						2										**2**
Don Bucefalo				2												**2**
Ecuba															2	**2**
Edipo Re															2	**2**
Einstein on the Beach								2								**2**
Farnace									2							**2**
Federico II	2															**2**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	**Total**
Fidalba e Artabano														2	**2**
For You							2								**2**
Fragmento de Orfeo		2													**2**
Fratellanza													2		**2**
Gemma di Vergy								2							**2**
Gesualdo Considered as a Murderer					2										**2**
Gianni di Parigi						2									**2**
Ginevra di Scozia									2						**2**
Goffredo Mameli							2								**2**
Hanjo						2									**2**
Hin und zurück						2									**2**
I due Figaro							2								**2**
I giuochi di Agrigento		2													**2**
I pazzi per progetto			2												**2**
Icarus												2			**2**
Il ballo delle Ingrate														2	**2**
Il Caravaggio rubato												2			**2**
Il cavaliere errante				2											**2**
Il Diluvio universale														2	**2**
Il finto turco					2										**2**
Il gioco del vento e della luna												2			**2**
Il maestro di Go					2										**2**
Il novello Giasone							2								**2**
Il parlatore eterno		2													**2**
Il prigioniero superbo						2									**2**
Il re														2	**2**
Il re Lear					2										**2**
Il re Teodoro in Venezia		2													**2**
Il ricco d'un giorno	2														**2**
Il tempo sospeso del volo				2											**2**
Il Tigrane							2								**2**
Il trionfo delle belle	2														**2**
Il vestito nuovo dell'imperatore						2									**2**
Into the Little Hill					2										**2**
Iphigénie en Tauride						2									**2**

Jephte											1	1				**2**
L'ajo nell'imbarazzo						2										**2**
L'Atenaide			2													**2**
L'Enfant prodigue									2							**2**
L'Italia del destino							2									**2**
La buona figliuola						2										**2**
La canterina	2															**2**
La colombe									2							**2**
La Dame de Monte-Carlo										2						**2**
La fede ne' tradimenti							2									**2**
La Griselda					2											**2**
La madre del mostro			2													**2**
La mort de Cléopâtre										2						**2**
La noche y la Palabra		2														**2**
La Princesse jaune						2										**2**
La rosa di carta					2											**2**
La serva scaltra		2														**2**
La spada nella roccia															2	**2**
La zingara												2				**2**
La zingara guerriera					2											**2**
Le disgrazie d'amore						2										**2**
Le Malentendu					2											**2**
Le nozze di Teti e di Peleo				1			1									**2**
Li finti filosofi		2														**2**
Li prodigi della Divina Grazia													2			**2**
Li puntigli delle donne					2											**2**
Lo sposo di tre e marito di nessuna	2															**2**
Marcella				2												**2**
Mare Nostrum		2														**2**
Maria de Rudenz										2						**2**
Maria di Rohan								2								**2**
Medeamaterial														2		**2**
Medusa		2														**2**
Miracolo a Milano				2												**2**

Mr Hyde?					2											**2**
Natura Viva						2										**2**
Nijinskys Tagebuch				2												**2**
Oliver Twist									2							**2**
Patto di Sangue					2											**2**
Pelagio					2											**2**
Phaedra				2												**2**
Philemon und Baucis				2												**2**
Pierrot Lunaire		2														**2**
Polidoro															2	**2**
Polyeucte	2															**2**
Proserpina												2				**2**
Proserpine															2	**2**
Rickshaw Boy													2			**2**
Robert le diable								2								**2**
Rodelinda							2									**2**
Romeo e Giulietta	2															**2**
Scanderbeg									2							**2**
Semele															2	**2**
Sì															2	**2**
Superflumina														2		**2**
Tancredi appresso il combattimento															2	**2**
The Book of Longing					2											**2**
The Emperor Jones					2											**2**
The Importance of Being Earnest														2		**2**
The Last Supper					2											**2**
The Raven													2			**2**
The Temptation of Saint Anthony	2															**2**
Tito Manlio						2										**2**
Torquato Tasso											2					**2**
Treemonisha															2	**2**
Un Parque		2														**2**
Viaggio musicale															2	**2**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot
all'inferno																
Volevo un foglio...	2															**2**
Whatever Works												2				**2**
Where the Wild Things Are	2															**2**
Zaira								2								**2**
Abai															1	**1**
AMGD									1							**1**
Amici										1						**1**
Apnea														1		**1**
Arbeit Nahrung Wohnung					1											**1**
Arlecchino finto morto						1										**1**
Atlas 101														1		**1**
Biedermann und die Brandstifter										1						**1**
Boletus									1							**1**
Chiuso nel centro, Orfeo							1									**1**
Clown							1									**1**
Combattimento di Tancredi e Clorinda														1		**1**
Der Diktator							1									**1**
Der Schulmeister									1							**1**
Der Zauberer von Oz														1		**1**
Donizetti Alive												1				**1**
Due teste e una ragazza								1								**1**
Edipo a Colono				1												**1**
Euridice					1											**1**
Ezio					1											**1**
Funeral Play													1			**1**
Furiosus															1	**1**
I falsari										1						**1**
I Hate Music							1									**1**
I promessi sposi												1				**1**
Il convitato di pietra												1				**1**
Il flauto tragico													1			**1**
Il Girello														1		**1**
Il mantello										1						**1**

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	Tot
Il noce di Benevento															1	**1**
Jack Kerouac Opèra							1									**1**
Junior Butterfly											1					**1**
L'amante burlato													1			**1**
L'aumento													1			**1**
L'empio punito											1					**1**
La Conférence des oiseaux			1													**1**
La Doriclea														1		**1**
La favola di Orfeo									1							**1**
La Fenice sul rogo						1										**1**
La Filli														1		**1**
La legge				1												**1**
La locandiera												1				**1**
La macchina										1						**1**
La morte di Didone							1									**1**
La notte poco prima della foresta						1										**1**
La Paura												1				**1**
La rivale													1			**1**
La serenata al vento									1							**1**
La stessa barca														1		**1**
La vida breve	1															**1**
Le cantatrici villane															1	**1**
Le Devin du village	1															**1**
Le gendarme incompris										1						**1**
Le grazie di Isabella				1												**1**
Lelio				1												**1**
Lillian Alling							1									**1**
Lo specchio magico												1				**1**
Lo speziale				1												**1**
Lodoletta													1			**1**
Love Counts			1													**1**
Love Hurts												1				**1**
Markheim											1					**1**
Messaggeri e messaggini		1														**1**
Murmullos del Pàramo			1													**1**

	1251	1179	1173	1261	1150	1218	1232	1338	1281	1314	1497	1530	1697	1636	1835	20592
One		1														**1**
Oniride							1									**1**
Orfeo										1						**1**
Orpheus Moments														1		**1**
Pietra di diaspro			1													**1**
Sant'Alessio														1		**1**
Séraphin		1														**1**
Serial Sevens									1							**1**
Si camminava sull'Arno										1						**1**
Silla	1															**1**
Simenon et Joséphine										1						**1**
Tea				1												**1**
The Prodigal Son										1						**1**
The Stone Guest											1					**1**
Trascrizione di un errore													1			**1**
Troposfera													1			**1**
Venus and Adonis											1					**1**
War Sum Up										1						**1**
Zeugen				1												**1**
803 TITLES \ TOTAL PERFORMANCES	**1251**	**1179**	**1173**	**1261**	**1150**	**1218**	**1232**	**1338**	**1281**	**1314**	**1497**	**1530**	**1697**	**1636**	**1835**	**20592**

On a Morphogenesis of Opera Repertoire Programs
as an Instance of Framing in Decision Making

Summary

Introduction

In the introduction of my Managerial Decision Making course, I was struck by an apparently obvious step in the decision-making process: the choice framework.

Framing of choice is needed to define any decision as such, thus it is not only the first step in decision-making and analysis, but it is also the most critical one.

I am deeply interested in the sector of performing arts, specifically in cultural management, so I took into consideration the framing of the decision-making of opera repertoire programming.

In my understanding, an opera repertoire program can be conceived as the result of a dynamic process, a process of individuation, in accordance with an epistemology of problems that is related to an ontology of processes.[1]

The morphogenetic approach to the process of individuation entails an epistemology of problems that differs from an epistemology of solutions: the latter knows by means of identity and regularity, by means of reproduction (deduction, induction and iteration) and of transmission of truth, being normative and normalizing; the former knows by means of "well-posed problems,"[2] by a framing, I would add, of problems that acknowledges the singular and the ordinary, the important and the unimportant, the significant and the irrelevant.[3]

From the "black box" of repertoire programming as a decision-making process, I looked for virtual patterns that could characterize the opera repertoire programming as an instance of framing in decision-making.

Theory and literature on repertoire programming: a review

Repertoire programming in performing arts is part and parcel of cultural institutions' management as a decision making issue.

With the publication of *Performing Arts: an Economic Dilemma* in 1966, the economists Baumol and Bowen actually created the subject of cultural economics,

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[1] Trevisan, P. (2017) *Reshaping Opera. A Critical Reflection on Arts Management*. Cambridge Scholars Publishing.

[2] De Landa, M. (2002). Intensive Science and Virtual Philosophy. London-New York: Continuum International Publishing.

[3] Mastroeni, F. (2010). "Conoscere per mezzo di ciò che non si sa". Scienza dei problemi e problemi della scienza tra Gilles Deleuze e Manuel DeLanda in Metàbasis.it - RIVISTA INTERNAZIONALE DI FILOSOFIA ONLINE CON PEER REVIEW, novembre 2010 anno V n° 10, p.3. At http://www.metabasis.it/articoli/10/10_Mastroeni.pdf, p.12.

and from then the Baumol's cost disease spread throughout the literature and the practice.[4]

Such cost disease is the escalation of the real costs that occurs in labour-intensive industries (like the arts, health care and education), that is hard to face utilizing labour-saving technical progress because the technical progress in these types of industries is either small or non-existent.

For the purposes of this thesis, the idea of disease is indeed evocative. Operas' repertoire programming is, like most decision-making processes, troublesome. I would say a "disease" process, from the Old French *desaise*, *des*-"without, away" + *aise* "ease",[5] so literally a dis-ease process.

Some authors recall that, as a matter of fact, cultural economics' origin deals with the coping of a chronic costs disease, the financial deficit affecting the institutions <<at times offset by an "artistic deficit" in the programming>>.[6]

As a conclusion of a streamlined review about quality, I would point out that, both for arts policy and cultural management, the assessment of artistic quality is indeed troublesome and the search for evidence of artistic quality may resemble the search for the Holy Grail.[7]

Not only the task of evaluating quality implies the definition of whom should judge and of the purpose of the evaluation itself, leading to differences in perspectives, values and metrics, but also it may misunderstand <<the freedom and conformity of individual experience.>>[8]

It appears to be a matter of subjectivity, thus difficult to articulate and to measure. In my understanding, it is not a matter of subjectivity of the experience, as I will try to articulate in this thesis, recalling the micro-sociology of Gabriel Tarde (1843-1904), that acknowledges imitation and innovation as fundamental flows of difference and repetition.

At La Fenice Opera House, a managerial turn that achieved the making of the virtuous circle linking financial and artistic goals, narrated by Trevisan, started in early September (in view of tourism in Venice) 2009, with twelve performances of

[4] Baumol, W.J. and Towse, R. ed. (1997). *Baumol's Cost Disease: The Arts and Other Victims*. UK: Edward Elgar Publishing Ltd.
[5] https://www.etymonline.com/search?q=disease
[6] Gomez-Vega, M., Herrero-Prieto. Luis C. (2019) *Measuring emotion through quality: evaluating the musical repertoires of Spanish symphony orchestras*. Journal of Cultural Economics, 43:211-245.
[7] Tomanová, J. (2018). *Understanding artistic quality and audience empowerment, what are they and why they can't be without each other?* in Breaking the Fourth Wall: Proactive Audiences in the Performing Arts, eds. Bonet L. and Négrier. Kunnskapsverket rapport 5/2018, at https://www.bespectactive.eu/wp-content/uploads/2019/09/Breaking-the-Fourth-Wall_publication.compressed.pdf.
[8] Idem, p.78.

La Traviata, implementing an artistic strategy that mixes <<the traditional Italian stagione approach with the repertory strategy typical of the German system>>,[9] with new productions aimed at enriching the repertory (Figure 1).[10]
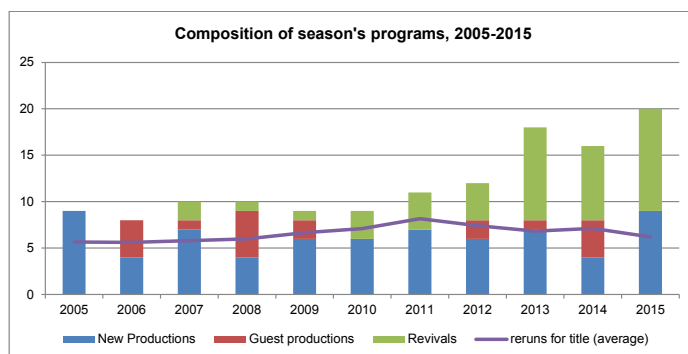
Figure 1 – La Fenice Season programs (2005-2015)

The coming upon face-to-face of artistic values, managerial logic and public service calling, highlights the role of creative professionals in cultural industry, of creatives in career.

Between utility and artistry appear to struggle economic logic and artistic logic. But they are both logic, are not they?

According to an history and an etymology for "logic", << Middle English *logik*, from Anglo-French, from Latin *logica*, from Greek *logikē*, from feminine of *logikos* of reason, from *logos* reason — more at LEGEND>>.[11]

So, legend: <<Middle English *legende*, from Anglo-French & Medieval Latin; Anglo-French *legende*, from Medieval Latin *legenda*, from Latin, feminine of *legendus*, gerundive of *legere* to gather, select, read; akin to Greek *legein* to gather, say, *logos* speech, word, reason>>.[12]

A matter of narration, indeed.

My interest is in the framing of opera repertoire programming and the supposed need of its "legitimation": following Trevisan's precious narration, in accordance with an opera house chief executive statement, <<The clear message is that La Traviata "pays" other operas, and without performing it there will not be enough resources to build-up other new productions.>>[13]

Trevisan may conclude that, if conformity of repertoire programming is understood as lack of innovation, one misunderstands both the impact of managing the arts

[9] Trevisan, P. (2016) *Reshaping Opera: A Critical Reflection on Arts Management.* Doctoral thesis at http://dspace.unive.it/bitstream/handle/10579/8355/807648-1175941.pdf?sequence=2, p.62.
[10] Idem, p.62-63.
[11] https://www.merriam-webster.com/dictionary/logic
[12] https://www.merriam-webster.com/dictionary/legend#etymology
[13] Trevisan, P. (2016), p.85.

management and the meaning of artistic innovation in the opera field: <<conformity is not the lack of artistic innovation: it is the essence of managerial innovation... We face a paradox in which the traditional managerial approach [the season one, editor's note] was artistically innovative, while, under a managerial perspective, replication is innovative. We can call this paradox – replication is innovation – with the oxymoron "conservative innovation"... nowadays artistic innovation is "different" – and not minor or lesser – than in the 19th century.>>[14]

So called artification and managerialization discourses, rational discourses and artistic, passionate, creative discourses share a fundamental, inextricable discoursiveness, rhetorical, that is verbal, relating to or consisting of words, practice, that is involving action, actual performance, application.

I ask: is there anyone who can avoid the engagement in any form of discourse?

It is a matter of framing, the first step in decision-making.

Everybody is embedded in the frame of language, enclosed closely in the language, as if in a matrix of ideas, that is a narration as anticipated above, be it the language English, mathematics, econometrics, words or numbers: nobody can slip away from the possible need of interpretation.

Opera blends <<vocal and orchestral music, drama, visual arts and dance... In Florence, a small group of artists, statesmen, writers and musicians, known as the Florentine Camerata, decided to recreate the storytelling of Greek drama through music. Enter Jacopo Peri (1561–1633), who composed Dafne (1597), which many consider to be the first opera.>>[15]

According to Djellai and Gallouj,[16] following Tarde's line of reasoning, <<After all, it is knowledge of resemblances and repetitions that makes it possible to count and measure phenomena. Thus, for example, in order to establish a cause-and-effect relationship between events, that relationship has to be repeated or repeatable. Repetition may take particular forms, one of which is growth or increase.>>[17]

How to differentiate imitation from invention, that is innovation?

The novelty criterion does not need radicality but has combinatory nature of previously existing elements.

[14] Idem, p.129-130.
[15] A Brief History of Opera at https://sfopera.com/discover-opera/intro-to-opera/a-brief-history-of-opera/ .
[16] Djellai, F., and Gallouj, F. (2014). The laws of imitation and invention: Gabriel Tarde and the evolutionary economics of innovation. Revue Economique. <halshs-00960607>.
[17] Idem, p.3.

A "contagionontological" perspective bears light on the social diagramming practice of "panspectrocism", being the process of contagion constructed as a knowable and controllable tool, not only << to *stop* and *contain* contagions…[but also with, ed. note] the twin aims of *injecting* and *monitoring/predicting* contagions… The panspectric diagram assumes that your future behaviour can be predicted through the examination of the imitative rays that you are exposed to. >>[18]

I ask: is not an audience exposed to the imitative rays of opera revivals?

Is there something viral and contagious in opera repertoire programming?

Instead of ascribing, for example, the La Traviata revivals to a defined managerial turn that fosters a new sense of artistic innovation, can we trace the contagion of the performances of certain opera titles?

Tony D. Sampson, reader in digital media cultures and communication at the University of East London, UK., in a 2011 article titled "Contagion Theory Beyond the Microbe",[19] addresses the emergence of an epidemiological social paradigm, pointing <<toward new universal models of contagious social influence and infectable consumer mood.>>[20]

Could a repertoire program be a <<"social form" composed of emotional vectors and affective contagious encounters>>[21]?

Tarde's laws of imitation evoke a mimetic unconscious and the discovery of "mirror neurons" provides scientific explanation about it, since <<'mirror neurons' generate automatic and unconscious reflexes that lead us to unconsciously mirror other people.>>[22]

According to Sergio Tonkonoff, researcher in philosophy of social science, Tarde argued for <<'the organization of imitativeness'…Moreover, invention does not mean rootless creation, but instead co-adaptation or composition of a pre-existing series of examples... combination of pre-existing premises that introduces new differences (new beliefs and desires)>>.[23]

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[18] Ibidem.

[19] Sampson, T. D. (2011). *Contagion Theory Beyond the Microbe*. CTHEORY Special Issue: In The Name of Security. At http://ctheory.net/ctheory_wp/contagion-theory-beyond-the-microbe/ .

[20] Ibidem.

[21] Ibidem.

[22] Lawtoo, N. *The mimetic unconscious: a mirror for genealogical reflections*, Borch, C. ed.. In *Imitation, Contagion, Suggestion: On Mimesis and Society,*. London: Routlege (2019), p.37–53. Online chapter available at: https://limo.libis.be/primoexplore/fulldisplay?docid=LIRIAS2346235&context=L&vid=Lirias&search_scope=Lirias&tab=default_tab&lang=en_US&fromSitemap=1

[23] Tonkonoff, S. (2013) A new social physic: The sociology of Gabriel Tarde and its legacy, article in Current Sociology, 61 (3), SAGE, p.267-282. Available at https://www.researchgate.net/publication/258131418_A_new_social_physic_The_sociology_of_Gabriel_Tarde_and_its_legacy, p.270-271.

With a view to a polygenesis in a multiplicity of instances, Tarde is against the hypostatizing, the reifying of notions, such as management, economics, arts, to be overcome by means of << reconstructing the specific processes of emergency and dissemination that those notions only capture in their results.>>[24]

For the purposes of this thesis, it is interesting to consider that, if what actually is contagious, what spreads, is the affective result of La Traviata performances as contaminating encounters, contaminators, in the affective atmosphere in which we live, a different interpretation of both the "artified management" and the managerialized art, entailing the spreading of La Traviata revivals, could be forwarded.

Exceeding the managerial and artistic realms of effect, La Traviata's love contagion appears to be responsive of both the *love of difference* and the *love of the same*,[25] thus their representations are encounters that trigger <<empathic contagions that spread through adaptive atmospheres of affect and imitative entrainment.>>[26]

Tarde, in 1890, wrote about social somnambulism, sleepwalking, enslavement to imitation, increasingly personal and rational.

Opera houses' chief executives, artistic directors, marketing and communication directors, directors of production, concur to realize an efficacious and effective contagion.

In my understanding, the "artification" of management and the managerialization of arts are neither impersonal nor transcendent models of structure.

An opera house is <<not a "collective self" [that] emerges *ex abrupto* from "its astonished associates.">>[27]

Opera houses emerge because associates like chief executives, artistic directors, marketing and communication directors, directors of production, as well as directors, conductors, singers, musicians, scenographers, technicians and the audience, find a way of conspiring with one another, concur to realize an efficacious and effective contagion, such as La Traviata revivals.

Latour recalls that Tarde was accused to be more a literate than a scientist, but he actually argued that << if it is wrong to consider individual variations as though they were deviations from a law, it is equally wrong to consider individual variations as

[24] Ibidem.

[25] Michael Hardt, *Love as a Political Concept*, a lecture for the European Graduate School, 2007. http://www.youtube.com/watch?v=ioopkoppabI

[26] Sampson, T.D. (2011).

[27] Latour, B. (2009). Tarde's idea of quantification. In The Social After Gabriel Tarde: Debates and Assessments, Candea, M. ed.. (2010) London: Routledge, pp. 145-162.

the only rich phenomenon to be studied by opposition with (or distance from) statistical results. It is in the nature of the individual agent to imitate others. What we observe either in individual variations or in aggregates are just two detectable moments along a trajectory drawn by the observer who is following the fate of any given "imitative ray."… It is the trajectory of what circulates that counts, not any of its provisional steps.>>[28]

Let me read Latour and interpolate again: << The importance of trajectory is the most clear with intellectual arguments,…consensus formation and paradigm entrenchments…deeply modify how individuals find their way in an argument. …[in opera houses, such as La Fenice] for each of the issue at hand, each individual converts to the consensus each for his or her peculiar reason. Later, they may once again re-differentiate themselves from any established dogma.>>[29]

It is difficult to follow the traces of a trajectory moving <<from each individual innovation, up to the aggregate, and then back again to the individual resistance that can develop in response to a given paradigm>>,[30] but, in my understanding, the account provided by Trevisan, for instance, shows some hints of the managerial turn at La Fenice as an imitative ray.

Tarde is well aware of the wide difference, in character or attitude, between the everyday case-by-case (the individual behaviour) and the rules, which appear to be summaries and guides alongside with actual cases and an abundance of earlier occurrences of something similar.

The reproductive success of, for example, La Traviata revivals in a managerial turn, should not be considered in terms of the individual variation to a law but it should be understood in terms of the operas' individual contribution to the reproductive success.

According to Latour reading of Tarde, in my understanding, for the purposes of this thesis, the scientific, rationale, managerial turn, be it the "artification" of management and/or the managerialization of arts, <<does not hang over the world from the outside. It has no privilege. This is precisely what makes science so immensely important: it performs the social together with all of the other actors, all of whom try to turn new instruments to their own benefits.>>[31]

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[28] Idem, p.153.
[29] Ibidem.
[30] Ibidem.
[31] Ibidem.

In an operas' season program, as a dynamic system, we could identify the relevant ways of changing of the system, its degrees of freedom.

We could so identify opera titles, number of opera titles and number of titles' performances as the degrees of freedom, that are therefore the dimensions of the space, the manifold of opera season programs, marked by diversity and variety through the seasons.

A state of a system becomes a point in the considered space and a series of states becomes a trajectory, possibly showing the tendency of opera season programs.

Does a form of opera season program become more likely actual?

By diagramming the structure of the space of possibilities for opera season programs, it could be showed a real, virtual program that becomes actual programs. For the purposes of this thesis, I will consider the population of 803 opera titles, whose performances distribution is unknown, performed in 15 seasons of programming in Italy, that are taken as samples of the aforementioned population, according to the available database.[32]

Are there title performances that are in excess of what can be expected?

In accordance with an ontology of essences as above outlined, the null hypothesis is that the observed samples of titles' performances are from the same population of title performances.

The alternative hypothesis is that the population of title performances is not the same.

In accordance with an ontology of processes as above outlined, I hypothesize that singularities configure a peculiar trajectory of opera titles performances in actual repertoire programs, thus showing a regularity of their morphogenesis throughout the considered season programming.

<u>Methods</u>

I will take into account the offered statistics[33] of opera performances, namely the "1000 most played titles", from season 2004-2005 to season 2018-2019 (15 seasons), in four countries: Italy, France, Germany and the United Kingdom.

The offered statistics are actually lists that I copied as Microsoft Excel sheets, in order to treat them by means of pivot-tables.

The distribution of data will be displayed by means of box-and-whisker diagrams.

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[32] https://www.operabase.com/statistics/en
[33] https://www.operabase.com/statistics/en

For the detection of outliers I will take into consideration Chebyshev's theorem, for unimodal distributions.

As a nonparametric test, in order to test an hypothesis, the Mood's median test deals with the equality of medians from two or more populations, calculating a chi-square value, with a probability value for an alpha risk of rejecting a null hypothesis actually true.

The Mood's test assumptions are that: the considered titles' performances are independent and random samples; the populations distributions have the same shape.

Are the titles performances samples actually independent? Moreover and above all: how can the titles performances in the considered seasons, the actual result of a decision-making process, the opera titles that were actually performed, be "randomly drawn"? Such a matter shall be coped with in the discussion chapter.

In order to map the intensive differences that dynamize the morphogenetic process of the seasonal opera repertoire programs, the most performed title is the first minuend from which the subsequent most performed title, subtrahend, is subtracted. The second title then becomes the minuend for the third, subtrahend, and so on. The intensive differences are listed in order to diagram, from within the process, the overall virtual intensive difference that resulted in the considered actual program.

Discussion of the results

Having non-random samples requires really great care in proposing any results.

The writing of a thesis is an actual problem, where <<the virtual possesses the reality of a task to be performed or a problem to be solved: it is the problem which orientates, conditions and engenders solutions, but these do not resemble the conditions of the problem.>>[34]

To say it differently, quoting Bent Meier Sørensen, Prof. at the Department of Management, Politics and Philosophy of the Copenhagen Business School, it occurs some <<defocusing the problem in order to 'produce the problematic'…the ability to produce the problematic of a given problem, instead of just solving it…thinking itself is a practice.>>[35]

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[34] Deleuze, G. (1968), p.212.
[35] Sørensen, B.M. (2005). *Immaculate defecation: Gilles Deleuze and Félix Guattari in organization theory*. The Editorial Board of the Sociological Review. Published by Blackwell Publishing Ltd, 9600 Garsington Road, Oxford OX4 2DQ, UK and 350 Main Street, Malden, MA 02148, USA, at https://doi.org/10.1111/j.1467-954X.2005.00545.x , p.125-127.

So, on the non-random sampling of titles performances and the statistical significance of any relevant hypothesis testing, I am aware that the randomness of sampling has a purpose: to reduce the probability of biased results in the testing itself, in order to give some meaningfulness to the testing.

The convenience, purposive sampling in this thesis is accepted as a methodological decision for a research question that can be said exploratory, because it shall not infer from the samples to the population in statistical terms for its conclusions, being at stake the validity of the inference.

The convenience, purposive sampling in this thesis cannot be said to have missed something because of its non-randomness: as a matter of fact, its non-randomness is due to the actual processes that select an opera title for the actual programming, that are non-chance, non-random processes.

It cannot be said that any subjective judgement biased the sampling taken from the mentioned site "Operabase", it being understood the correctness of the recorded and available data, and of course of their treatment.

The convenience, purposive sampling in this thesis captures the results of decision-making processes, which are of interest for the purposes of this thesis, specifically in order to address the framing as a first, critical step in any decision-making process.

As for the independence of the considered titles performances samples, i.e. no title of one sample can be used to determine a title of another sample, in this thesis not only it is acknowledged the flow of imitation as a social driver, but it is also stated above that La Fenice's repertory choice was faithful to the list of the ten most performed titles in the world in 2013-2014, with the exception (to be readily integrated by La Fenice's production in 2015) of *Die Zauberflöte*.

Therefore, again, for the purposes of this exploratory research, the interest in the actual opera repertoire programs suggests to try the Mood's test, in order to have maybe some hint, if not as for the statistical significance, at least as for the meaning of some outliers.

In accordance with Chebyshev's theorem, outliers in the overall titles performances in 15 seasons are detected only in Germany and in Italy, the two countries with the highest number of opera performances, respectively 87,777 for 1,567 titles performed and 20,592 performances for 803 titles (in France, 15,382 opera

performances for 900 titles, and in the United Kingdom, 12,623 performances for 735 titles).

That is interesting, because in Germany prevails, according to Trevisan's accounting above, the repertory production strategy, due to the availability of permanent company of singers, performing different titles, in opera houses.

Such production strategy, that has impact on the opera repertoire programming, differs from the "stagione" system, i.e. the staging of new or guest productions in each theatrical season.

In the narrated success story of a managerial turn at La Fenice, starting from 2009, it is indeed the implementation of a semi-repertory strategy, by means of revivals of performances of some titles, that in Italy led to *La traviata* by Verdi as a steady outlier.

Taking into consideration the above outlined theoretical frame, I claim that this happened by difference and repetition, i.e. imitation, with a view to the alignment pinpointed above, as for La Fenice's repertoire, with the world ten most performed titles in 2015.

Anyway, the point of this thesis does not argue the effectiveness of the narrated managerial turn but, dealing with the question of framing as for decision-making processes, points out that the outlying of some titles, always with respect to the inlying of some others in a considered distribution, does not come from any turn.

It is a morphogenetic feature in the process that actualizes opera repertoire programs.

Problems do not vanish behind their solutions and a well-posed problem is defined by << correctly grasping the objective distribution *of the singular and the ordinary*.>>[36]

There are indeed virtual title-singularities that by means of differential intensities (e.g., the value 19 in Italy, in 2004-2005, could be actualized as 89 performances of a title with respect to the 70 performances of the following most performed title) that structure actual programs: in Italy, in 2004-2005, actually there were 65 performances of *La bohème* by Puccini, followed by 46 performances of *La Traviata*, by Verdi.

The triviality of recognizing that there are opera titles' that are much more performed of others should not, in my understanding, disguise the main point.

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[36] De Landa, M. (2002), p.116.

I recalled above Trevisan's narration, in accordance with an opera house chief executive statement: <<The clear message is that La Traviata "pays" other operas, and without performing it there will not be enough resources to build-up other new productions.>>[37]

It appears that it is not a matter of *La Traviata*, since in Italy the outlier in 2004-2005, long before any managerial turn narration, it was *La bohème*, in 2007-2008 it was *Tosca*, in 2008-2009 it was *Aida*.

What happened to *La Traviata* performances is the imitation, repetition and difference, of a morphogenetic process configuring trajectories of programs attracted by a singularity.

Discourses in managerialese, the use of managerial concepts and the related vocabulary, may provide the relevant explanations, that notwithstanding their objectiveness, still are forms of narration.

A relative invariance under transformation throughout 15 seasons of operas' repertoire programming was shown.

Paraphrasing De Landa, operas' repertoire programs can be considered as <<equilibrium structures which emerge from a process driven by intensive gradients>>, that is <<differences in intensity, though not in quality>>,[38] the spontaneous tendency of its titles to minimize, or maximize, or optimize an intensive difference.

<<Difference is not diversity. Diversity is given>>,[39] so: the titles are diverse in an operas' repertoire program and difference is that by which their diversity is given in a program.

Taking into account the disguising of a process under its product, both an ontology of processes and a relevant epistemology of problems foster a betterment of the framing practice in decision-making.

For the purposes of this thesis, one could consider the hypothesis that innovation in operas' repertoire programming appears to be skew-distributed arguing that decision-makers, motivated employed inventors, as for operas' repertoire programming are skewness lovers in the risk-taking of programming.

The point is that the skewness evidence of opera titles' performances in this thesis could not and cannot be *ex ante*, but only *ex post* operas' programming and

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[37] Trevisan, P. (2016), p.85.
[38] De Landa, M. (2002), p.60.
[39] Idem, p.61.

performing: for the purposes of testing such an hypothesis, how to measure empirically the *ex ante* skewness potential of opera titles' performances?

Moreover, in my understanding, by dialoging with other authorial voices and interpolating the matter at subject, the log normal distribution that Scherer considers to provide a better fit, than the Paretian one, as for the rewards skewness phenomenon, still suffers the <<application of the ludic fallacy to randomness>>,[40] related to the Gaussian, bell curve.

What randomness would be applicable to opera titles performances?

I cope with, as an a priori assumption, a lack of structure of opera titles' performances randomness.

Such lack of structure of the considered randomness, be the randomness due to the knowledge limits of a particular observer, that is epistemic, or be it ontological uncertainty of the processes, <<prone to path dependency>>,[41] imposed me to work with the historical data of operas' repertoire programming, from 2004 to 2019.

In order not to <<travel the road between representation and reality in the wrong direction>>,[42] I tried to avoid the fallacious trap of seeking an explanation as for the observed distribution, looking for a "generator" of reality.[43]

There is <<no headwind to slow [opera titles] down>>,[44] to slow *La Traviata* in getting less performed, as there is no headwind to slow inequality, to slow the rich from getting richer.

Following De Landa's ontological and epistemological reasoning, operas' repertoire programs appear as the result of individuation processes, singular cases in fact actualized, that show productive causes.

An essentialist ontology and its relevant epistemology may conceal the productive power of intensive differences behind static categories, e.g. quality.

Linguistic statements should preserve the dynamism of the intensive differences.

It is not a matter of describing regularities, but to secure the mechanism-independent reality of the most performed titles.

Taking into account, as an exemplification, the narration of the managerial turn at La Fenice, it proposes a population of parasite titles parasitizing a few, that become

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[40] Taleb, N.N. (2010). *The Black Swan. The Impact of the HIGHLY IMPROBABLE.* New York: Random House Trade Paperback, p. 303.

[41] Idem, p.344.

[42] Idem, p.269.

[43] Idem, p.270.

[44] Taleb, N.N. (2010), p. 233.

ever more parasitized in order to let the population of parasite titles grow: such a coupling of parasite and parasitized titles demands indeed an explanation.

Opera repertoire programs as results of individuation, historical causal processes, have an actual and a virtual history, reciprocally interacting, defining << an objective realm of virtual problems of which each actualized individual is but a specific solution…with Deleuze's own words, <<it is correct to represent a double series of events which develop in two planes, echoing without resembling each other: real events on the level of the engendered solutions, and ideal events embedded in the conditions of the problem>>.[45]

It is worth seeking the design of framing, taking into consideration the processes as morphogenetic, mapping a distribution of intensive differences, whose critical thresholds trigger events that configure singularities entailing trajectories, actualized by the product of the process.

Framing, as a step in the problematic decision-making process, appears as a problem in itself.

The problematization implied in the decision-making entails conceptualization, because concepts are of consequence, that is they do matter if they are supposed to do something.

Thus, original terms should be conceived for the framing, in order not to look for its truth with reference to its solutions, but for its constitutive fruitfulness.

Be it for the purposes of inquiry, consideration or problems' solutions, the power to decide is akin to the power of questioning.

It is not a matter of mistakes in deciding an operas' repertoire program, as if a successful programming were the problem, in order to avoid false solutions.

A not well-posed problem, that is a false problem, may drive us in a somehow illusional accounting of reality, a condition entailed by the falsity of the problem.

But one breaks free from such an illusion not by ascertaining the mentioned falseness, one needs a new problematization, that is a new framing.

Not only the decision-making is problematic, but also the first step in decision-making, i.e. the framing, is a problem.

The framing is the positing of choices available, where the choices are the solutions of the problem of framing,

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[45] Idem, p.156.

The determination of framing as a problem is the genesis of the concomitant solution, that fixes, posits a limit to the available choices, thus entailing a not available outside.

s such limit a border or a barrier? What is the relation between the outside of the framing and the framed? Is the outside negated, neglected?

Between a problem, e.g. the framing, and a solution, e.g. the choices framed, there is reciprocal immanency.

What is framed does not exist independently of the framing. The framed choices (the solution framing) do not exist independently of the choices framing (the problem framed).

In order to avoid the misstep entailing the missing of the generative power of a problem, one should not think the problem starting from the possibilities of solving it.

The framing should not simply aim at framed choices to choose among, but it should aim at its problematizing.

Performing in Italy 171 times *La Traviata* in the season 2018-2019, i.e. 91 times (intensive difference) more than the 80 performances of *Rigoletto* in the same period of time, does not appear as a managerial turn effect, capable of understanding the problematization of the framing in an opera repertoire programming as a decision-making process: it conceives the framing of the choices framed simply emphasizing what where the framed choices before the narrated managerial turn.

As a matter of fact, since 2004, there always have been opera titles super-performed, acknowledged in this thesis as singularities-attractors that constitute the trajectories of opera repertoire programs.

The framing as a problem should maintain its problematical aspect, it should become methodologically an event, it should be expressed as an event, entailing a sense.

Conclusion

Framing for decision making purposes can be defined as the process of framing the available choices in accordance with criteria, interests, calculations, preferences…When applying this approach, what makes the framing problematic must not be lost.

I tried to address the problem of framing in decision-making by considering the mutual relationship between the framing of choices and the choices framed. The judgment on the validity of solution, e.g. a success of a managerial turn, should not be transferred to the judgment of the problem, or of the framing itself.

Indeed every problem has its own solution.

A well-posed problem is not one with the effective, right, true solution, that would just solve it, making it not a problem anymore.

Consider the problem: is it true that there is no sufficient money for the programming of opera performances? Well, let us perform the maximum dose of the same opera that the audience can tolerate, in order to have the money for other opera performances.

A well-posed problem does not die by means of solutions, it lives through its solutions.

A well-posed framing step in a decision-making process is not the one which posits the effective, right, true choices that just solve it, making the framing not a problem anymore.

A well-posed framing does not die, but lives through its solution: it preserves the framing's capacity of orientating the sense by which we state the truthfulness or the falseness of the solutions.

The supposed spontaneity with which one assumes that naturally one can recognize, understand and really conceive what is outside of their mind and reason, cannot avoid that such mind and reason are exposed to an outside that is radically exceeding and unsettling.

With the occasion of this thesis I tried to taste the freedom of experimenting and critiquing, through a journey of encounters.

Let me quote again, *verbatim* because the repeating that imitates what is identical may well add the difference: <<the notion of value implies a *critical* reversal. On the one hand, values appear or are given as principles: and evaluation presupposes values on the basis of which phenomena are appraised. But, on the other hand and more profoundly, it is values which presuppose evaluations, "perspective of appraisal", from which their own value is derived. The problem of critique is that of the value of values, of the evaluation from which their value arises, thus the problem of their *creation*. Evaluation is defined as the differential element of corresponding values, an element which is both critical and creative. Evaluations, in essence, are

not values but ways of being, modes of existence of those who judge and evaluate, serving as principles for the values on the basis of which they judge. This is why we always have the beliefs, feelings and thoughts we deserve given our way of being or our style of life.>>[46]

The problem of framing in decision-making, of the evaluation of choices in the framing, is both of their critique and of their creation, and no decision-maker can escape from her or his or its own trajectory of existence, but every decision-maker shall realize framings through it.

I am still in the very beginning of my own framing investigation.

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[46] Deleuze, G. (1962). *Nietzsche and Philosophy*, English translation by Tomlinson, H. (1983). Columbia University Press, p.1.