Mediators, scientists and informants
Military and ecclesiastical

Between scientific research, mnemotechnic tradition and evangelical mission: the role of Francesco Giuseppe Bressani S.J. in the history of Canadian cartography

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Riassunto: Attraverso l'analisi della prima cartografia dettagliata dei territori del Canada orientale prodotta in Italia (1657), il presente saggio ricostruisce la metodologia approntata dal suo creatore, costituente un caso di studio di centrale importanza per comprendere alcune fondamentali dinamiche di una delle più grandi sfide scientifiche di periodo moderno, il calcolo della longitudine. Verranno inoltre indagate caratteristiche contenutistiche, didattiche e teleologiche di tale produzione scientifica - indissolubilmente legata ad istanze di carattere religioso -, così come elaborata da un missionario gesuita del XVII secolo.

Abstract: Through the analysis of the first detailed cartography of the territories of Eastern Canada produced in Italy (1657), the present essay retraces the methodology established by its creator, constituting a case study of crucial importance to understand some core dynamics of one of the greatest scientific challenges of modern period, the quest for longitude. Substantive, didactic and teleological features of this scientific production, as developed by a XVII century Jesuit missionary - inextricably linked to religious issues - are going to be investigated as well.

Keywords: Canada, cartography, longitude, Society of Jesus, Francesco Giuseppe Bressani, Nicolas Sanson

Education and formation of a Jesuit missionary

Even if no room for doubt is granted concerning the remarkable contribution given by the Jesuit Father Francesco Giuseppe Bressani (1612 - 1672) to the knowledge of North America - thanks to the account of his journeys in the context of the evangelical mission in the territories of the Hurons between 1642 and 1650[1] -, still little, maybe too little has been said about the not negligible contribution provided by him to the mapping of the lands between the Saint Lawrence river gulf and the Great Lakes region and, more generally, to the solutions, sought with dedication and rare skills, to the great scientific questions of the time, and above all, the calculation of longitude. Before going into a detailed analysis of Bressani's cartography[2], it will be nonetheless opportune to reconstruct briefly the historical context related to his formation[3].

Francesco Giuseppe Bressani was born in Rome on May 6, 1612, from a wealthy family. At the age of fourteen, he joined the *Compagnia* on August 15, 1626, attending the first two years of novitiate at Sant'Andrea in Monte Cavallo (substituted by Sant'Andrea al Quirinale in 1658). Already at such a tender age, he was moved by a religious fervor certainly nourished not only by the scholastic environment, but

[1] Published in *Breve relatione d'alcune missioni de' PP. della Compagnia di Giesù nella Nuova Francia.* Macerata, per gli Heredi d'Agostino Grisei, 1653 (hereafter BRESSANI 1653). Bressani's *Breve relatione* has been translated and published in English (*JR* XXXVIII-XL) and French (MARTIN 1852).
[2] *Novae Franciae accurata delineatio*. Bologna [s.n.], 1657.
[3] The best accounts on Bressani's life today available are MENCHINI 1980, LATOURELLE 1999 and VITELLI 2014.

also by having witnessed, in all probability, the ceremonies carried out in Rome during the canonization of the founders of the Society of Jesus, Ignatius of Loyola (1491 - 1556) and Francis Xavier (1506 - 1552), which took place on March 12, 1622, by the will of Pope Gregory XV (1621 - 1623). His precocious vocation is evidenced by a first letter he sent to the Superior General of the Society Muzio Vitelleschi (1563 - 1645) in July 1627 in which he expressed his desire to become a missionary[4]. He reiterated his will in two further letters sent to Vitelleschi between September 1628 and the end of the same year[5], at the beginning of the period in which Bressani (1628 - 1630) moved to the *Collegio Romano* (today Pontifical Gregorian University) to deepen his philosophical and mathematical studies, under the guidance, among the other professors, of one of the most mysterious Jesuit scientists teaching for the Society at the time, a scholar of astronomy, interested himself in the problem of longitude, Christoph Grienberger (1561 - 1636) [6]. He succeeded in 1612 to his teacher Christopher Clavius (1538 - 1612), who had done much to ensure that in Jesuit colleges were taught, in addition to Mathematics, Astronomy and Cartography as well, precisely because of the importance that such studies could have had for future missionaries engaged in distant lands[7]. The advanced knowledge of astronomical geography and cartography demonstrated by Bressani at a mature age in his *Breve relatione* and especially in his *Accurata delineatio* are certainly a direct reflection of the teachings given to him by Grienberger, as well as a personal inclination towards the subjects he dealt with.

The young Francesco Giuseppe continued his career with two years of *regency* (teaching apprenticeship), during which he gave lessons in Grammar and Rhetoric as a professor of V grade at the College of Sezze Romano (1630 - 1631) and of III grade at the College of Tivoli (1631 - 1632). In 1633 he returned to the *Collegio Romano* to carry out the first three years of Theology courses, under the guidance of the man he always considered as his greatest master, so much so as to dedicate him the *Breve relatione*, Juan de Lugo (1583 - 1660), among the most appreciated theologians of the XVII century, Professor of Dogmatic Theology at the *Collegio* from 1621 to 1642. At the end of the third year, in 1636 he went to Paris to attend the fourth and final year of theological formation, at the College of Clermont, where he also learned French. Vitelleschi wrote to him on September 9, 1636, informing him that would have been sent to India or New France (Canada)[8], promise confirmed on March 12, 1637, that would have been granted only after the completion of his study courses[9]. In the meantime Bressani was nominated priest in January 1637 in Paris, where he was staying to complete his formation with the studies of Spirituality (third and last year of novitiate, 1637 - 1638). Meanwhile, Vitelleschi continued to stall and with a new missive of February 20, 1638, renewed the promise made almost two years before[10]. The will of the Superior General was undoubtedly that of making sure that the young novice had received the appropriate training, as well as having demonstrated his teaching skills, which during the missions

[4] *MNF* II, p. 165.
[5] *MNF* II, pp. 199-200.
[6] Besides teaching, Grienberger gave his best contributions as technical censor and proof-reader of almost every Jesuit mathematician of his time, being constantly updated concerning the evolution of mathematical research and in contact with the most prominent scientists (e.g. he and Galileo Galilei (1564 - 1642) wrote to each other in 1611, discussing the height of lunar mountains). Grienberger published only four works during his life: a catalogue of star charts (*Catalogus veteres affixarum Longitudines, ac Latitudines conferens cum novis*, 1612), an essay on the origin of burning glasses (*Speculum ustorium verae ac primigeniae suae formae restitutum*, 1613), an abridged edition of Euclid's *Elements* (*Euclidis sex primi elementorum geometricorum libri cum parte undecimi*, 1629) and a treatise on trigonometry (*Elementa trigonometrica*, 1630). He was involved in Science teaching (*Mathesis*) at the *Collegio Romano* in five different periods: 1595-8, 1602-5, 1612-6, 1624-5, 1628-33 (VILLOSLADA 1954, p. 305).
[7] On the influence of Clavius over the reformation of scientific studies in the Jesuit school system vd. GATTO 2008.
[8] *MNF* III, p. 818. In those days *New France* was intended as the area going from the mouth of Saint Lawrence river up to the eastern shores of Lake Superior and Lake Michigan.
[9] *MNF* III, pp. 820-821.
[10] *MNF* IV, p. 9.

would have proven indispensable. Bressani continued teaching Grammar and Rhetoric, to which were added Philosophy and Mathematics, first in Paris (1638 - 1641) and finally at the College of Dieppe (1641 - 1642), where he was eventually reached by the news that would have been sent in New France[11]. And from Dieppe he left, between the end of April and the beginning of May 1642, together with two other missionary companions, Paul le Jeune (1591 - 1664), who between 1632 and 1639 had been Superior of the Canadian Mission and Claude Quentin (1597 - 1676), Treasurer of the Mission at the time.

The place of Bressani's *Breve relatione* in the historiography of the Jesuit Mission in New France

During the years of study and apprenticeship of Bressani, the Jesuit mission in New France had known ups and downs. After several attempts, a few missionaries of the *Compagnia* had managed to reach a certain stability settling in Quebec in 1625 and from there, going up the Saint Lawrence river and the Ottawa river, came into contact with the Huron people[12], in the heart of Ontario, along the southern shores of Georgian Bay, in a region almost corresponding to today counties of Simcoe and Grey. Situated in the North-American inland, this region represented in the Jesuit imagery the gateway to the unexplored west and, being located in a central area, it seemed to them as the perfect headquarter for their work of evangelization[13]. Anne de Noüe (1587 - 1646) and Jean de Brébeuf (1593 - 1649) settled here between 1626 and 1628. Brébeuf was one of the most important members of the mission and certainly the one who contributed the most to the learning of Huron language and to the ethnographic study of this native population[14]. After the loss of Quebec against the English in 1629, the mission was interrupted, resuming only in 1632 with Le Jeune as Father Superior. Thus began the crucial phase of the evangelization of the Hurons which ended in 1650 with their almost complete annihilation by the hands of the Iroquois[15] - their sworn enemies - and with the consequent relocation of the few hundred survivors in the French territories near Quebec. And it is precisely during the most delicate period in the history of the Jesuit mission in New France that Bressani operated.

It will be better to underline, before going into detail about the technical analysis of the strictly scientific contributions of Bressani, that him, as is clearly evident from the reading of his *relatione*, was always driven by a sincere and profound religious fervor, aimed at spreading the message of Revelation in distant lands (tragically hostile for him as for many of his companions). The desire for scientific accuracy, as well as the results obtained thanks to it, although admirable, are a direct consequence of this fervor. We are not here before an explorer *strictu sensu*, in search of objective truth, but of a man of faith who, in the exercise of his evangelical duties, has exploited every knowledge at his disposal with the intent to succeed in his task, which makes his predisposition to sacrifice, even in the observation of strictly scientific methods, even more exceptional.

A fact to which, in our opinion, has not been given due weight and which will help to show how both the *Breve relatione* and the 1657 map have deep teaching connotations aimed at the formation of future missionaries, is the interest shown by Bressani, immediately after his arrival in Quebec, at the end of July 1642, to make available in his country (and more generally outside the strictly French environments of the Jesuit missions) reports on the state of affairs, immediately providing an updated and usable mean to inform and nourish the religious fervor of the Italian confreres. Thus, during the summer he translated in Italian the second part of the annual relation of the Huron Mission and that of

11 *MNF* V, p. 31.
12 Native people known as Wyandot or Wendat. Also called Huron Nation. Their territory was known as Wendake.
13 For a detailed history of the Huron Mission vd. CAMPEAU 1987.
14 Vd. LATOURELLE 1952-3.
15 Native American confederacy, known in colonial period as Iroquois League, Iroquois Confederacy or Five Nations. In their language are known as Haudenosaunee (*The People of the Longhouse*).

the Algonquin Mission[16]. This translation was forwarded at the end of September to Vitelleschi, who replied him on January 14, 1643, praising and assuring him that it would have been read for the consolation and edification of his confreres[17]. A similar predisposition will lead him to the drafting of his *Breve relatione*, immediately after his return to France in December 1651. In it, unlike what might be expected, we do not find an historical account of the mission, which would have aroused the interest of a broad audience, being the first direct report published outside France and concerning territories of which very little was known in Italy. The *relatione* is instead similar in content to the annual reports that the Jesuits sent to France for the training of the confreres and to keep updated those who contributed to the funding of missions overseas[18]. It is divided into three parts. The first deals with the geography of places, focusing firstly on the hypothesis about relevant scientific questions[19] and then on a long and detailed ethnographic portrait of the Huron people; the second is entirely dedicated to the problem of conversion, in which the author focuses on the illustration of the problems and risks to be taken into account in the exercise of evangelization (in this second part we find the transcription of the letters containing the report of the captivity and the tortures suffered by Bressani at the hands of the Iroquois between April 29 and August 19, 1644)[20]. The third and last part is a martyrology of the eight missionaries killed in the exercise of their duties between 1642 and 1649, to whom Bressani adds Anne de Noüe, who died of hypothermia getting lost in a winter storm while he was leading two soldiers and a Huron man from Trois-Rivières to Fort Richelieu (today Sorel-Tracy)[21], and Énemond Massé (1575 - 1646), who took part in each and every Canadian Mission since 1609; the latter is inserted by Bressani in the number of martyrs for his dedication and self-denial. The relationship ends with the description of the agony of the Huron people and the rescue of the survivors, led to Quebec in the summer of 1650.

Reading Bressani's account, we find clear references to the importance of evangelization and to the diffusion of the message of Revelation, as well as commendable acknowledgments of the mistakes of the Jesuit Fathers in the exercise of their duties. These observations seem to be directed to a future generation of missionaries, a detail that characterizes the *Breve relatione* as a real changeover for those who from that moment on would have had to take the place of Bressani and his confreres, being well aware of the risks and potential errors, and bearing in mind the martyrs' lesson. Significant in this sense are two passages in particular:

> *Vorrei* […] *avvertire quelli, che s'impiegano nella conversione de' nuovi paesi, a non credere facilmente, e senza un diligente esame le cose istesse, che sono con l'approbatione comune de' secoli stimate senz'alcun dubio. È facile condannare di superstitione molte leggerezze, e prohibirle come tali; ma non è facile il disdirsi, ed' impedire il disprezzo ne' più sensati, che sapevano il secreto. Noi siamo stati un poco severi in questo punto, & habbiamo obligato i nostri primi Christiani, che trovavano della superstitione da per tutto, a privarsi non solo delle ricreationi lecite, ma anche del commercio degli altri, e di più della metà della vita civile, finché il tempo, l'esame, e l'esperienza ci hanno assicurato del contrario*[22].

16 *MNF* V, pp. 293-339, 341-367.
17 *MNF* V, p. 558.
18 Originally published in French, then collected and translated in English into the *Jesuit Relations* series (*JR*).
19 We can see observations concerning Canadian climate (BRESSANI 1653, pp. 2-4), geographical position of the Huron region (ivi, pp. 5-7), tides, lake hydrography, use of compass and declination of the magnetic needle in Canadian territories (ivi, pp. 26-28). Cf. *JR* XXXVIII, pp. 220-227, 234-239; XXXIX, pp. 34-41.
20 BRESSANI 1653, pp. 31-52 (*JR* XXXIX, pp. 54-97).
21 He was considered by Bressani as a *martyr of charity* (BRESSANI 1653, p. 75; *JR* XXXIX, p. 166-168).
22 BRESSANI 1653, p. 24 (*JR* XXXIX, pp. 27-29: *I would like* […] *to warn those who apply themselves to the conversion of new countries not to believe easily, or without a diligent examination, even those very things which are, by the common approbation of centuries, believed to be beyond any doubt. It is easy to condemn, on the ground of superstition, many frivolities, and to prohibit them as such; but it is not easy to recant, or to avoid contempt from the most sensible, who knew the secret. We were somewhat severe on this*

> *Che se il lettore mi domandasse, che diverrà questa missione; se si rimetterà un giorno; se v'è speranza di ritornare per gli Huroni, e per i nostri. Io gli risponderei, che "Iudicia Dei abyssus multa". Ma se il furor de l'Hirochese si reprimesse, perché no? Io so, che vi sono grandissime difficoltà, ma "quae impossibilia sunt apud homines, possibilia sunt apud Deum, apud quem non est impossibile omne verbum". E per altro il mondo non finirà, che l'Evangelio non sia predicato da per tutto. Hor verso l'Occidente degli Huroni sino al mare della Cina sono innumerabili nationi, "quibus nondum est annunciatum Regnum Dei", bisogna dunque che un giorno l'Evangelio c'arrivi, quando bene tutte queste missioni per un tempo finissero, Dio sa il come. "Non est nostrum nosse tempora, vel momenta, quae pater posuit in sua potestate". Ma sì bene di supplicarlo, che quanto prima "adveniat regnum suum", e che sia glorificato da ogni gente, e natione, finché "fiat unum ovile, & unus pastor, & omnes labio unum laudemus viventem in saecula saecolorum"*[23].

In this same direction and indeed, deepening this line of thought, it seems to go the map promised by Bressani in the *explicit* of the *Breve relatione* and published in January 1657, which we are about to discuss.

Mapping the unknown: XVII century Canadian cartography

Of what is known as the work of the Roman Jesuit, surely the 1657 map is his contribution that has aroused more interest in scholars. However, although contributions dedicated to historical, geographical and ethnographic aspects related to this important cartographic document are not lacking[24], especially under two aspects these same contributions seem lacking. First of all, the symbolic and programmatic intent of the iconographic-descriptive sections, whose overall meaning is clear only by looking for it keeping in mind the development of Bressini's *forma mentis*, a man of his time, but still a Jesuit missionary. Second aspect, whose study becomes indispensable (and now finally possible), is the understanding of the astronomical and mathematical operations that led Bressani to the creation of the map, in order to appropriately place it both in the history of cartography and in related scientific researches.

The *Novae Franciae Accurata Delineatio 1657* (Fig. 1), a two sheets copperplate engraving whose overall measures are 510 x 745 mm, taking into account the numerous iconographic contributions contained in it, is intended as an attempt to immediately render the information contained in the *Breve relatione*, with the addition of the appropriate toponymy and numerous details relating to events following the publication of his report (1653). Looking back on it the facts reported in the *relatione*, it is clear how the map wants to tell us a story, from the arrival in New France through the mouth of the Saint Lawrence river, where we see - in addition to a sea monster and a whale - a vessel, to the ascent towards the inland,

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point, and obliged our first Christians - who found superstition everywhere, to deny themselves no! only lawful recreations, but also intercourse with others, and more than half of the social life -, until time, examination, and experience assured us of the contrary.).

[23] BRESSANI 1653, p. 127 (*JR* XL, pp. 58-61: *Now if the Reader should ask me, "What will become of this mission?" - whether it will be restored some day; whether there is hope of a return for the Hurons and for ours - I would answer him that "Judicia Dei abyssus multa". But if the fury of the Hiroquois should moderate itself, why not: I know that there are very great difficulties, but "quae impossibilia sunt apud homines, possibilia sunt apud Deum, apud quem non est impossible omne verbum". And, furthermore, the world will not end until the Gospel has been preached everywhere. Now Westward from the Hurons, even to the sea of China, are innumerable nations, "quibus nondum est annunciatum Regnum Dei", hence it is necessary that the Gospel one day reach thither; even though all these missions should cease for a time; God knows how. "Non est nostrum nosse tempora, vel momenta, quae pater posuit in sua potestate" - but, indeed, to beseech him that "adveniat regnum suum" as soon as possible; and that he be glorified by every people and nation, until "fiat unum ovile, et unus pastor, et omnes labio unum laudemus viventem in saecula saeculorum"*.).

[24] CARDINAL 2004 and 2009; GARRAD 1997, pp. 4-5 and 2014, pp. 66-68; HEIDENREICH 1966, pp. 105-109; HEIDENREICH; DAHL 1980, pp. 5-7; MNF VIII, pp. 35*-54*; TRIGGER 1976, pp. 581-584.

Figure 1: Francesco Giuseppe Bressani, *Novae Franciae Accurata Delineatio 1657*. Courtesy Bibliothèque Nationale de France, GE DD-2987 (8580 RES).

through the Ottawa river, to the mission headquarters, in Huronia, a region that we observe in detail in an inset map inserted on the top right corner of the west sheet (*Huronum explicata tabula*, Fig. 2). The toponymy is in Latin, the indigenous names are Latinized starting from the Huron version also of those

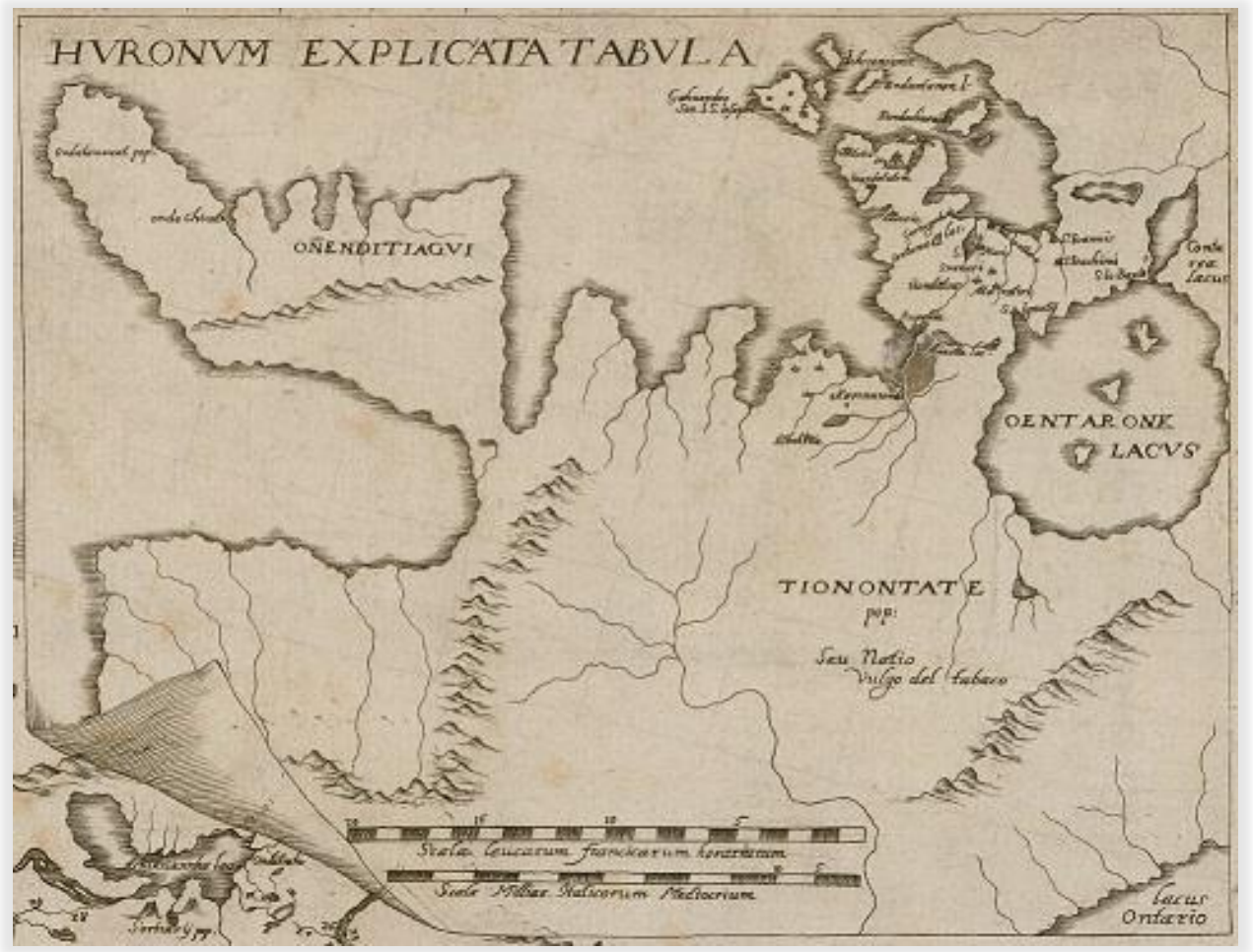

Figure 2: *Novae Franciae Accurata Delineatio 1657*, inset map of Huronia.

places inhabited by other populations, distances are based on a double scale of French leagues (*leuca Francica horaria*, ancient Parisian league = 3266 m) and Italian miles (*miliaria Italica communis/mediocris*, Italic mile = 1851.85 m, not to be mistaken for the Roman mile = 1482,5 m), parallels and meridians are numbered. The map is designed according to the sinusoidal cartographic projection scheme, whose most ancient example is the 1575 planisphere by the mapmaker and hydrographer Jean Cossin (XVI century), a prominent member of the Dieppe cartographic school. This particular kind of projection was made famous by the cartographer and geographer at the service of the King of France, Nicolas Sanson (1600 - 1667), who used it a few years before Bressani, for a cartography that the latter knew very well, the *Amerique Spetentrionale* (1650), mentioned by him in the *Breve relatione*[25].

We are not going to run a detailed analysis of the populations indicated in the map, their positioning and the toponymy used by Bressani to indicate them, since it would be the simple repetition of what has already been said, with exhaustiveness and abundance of details, by others. We are interested only in underlining how this map turns out to be the most authoritative cartographic record produced up to that moment of geographic and ethnographic knowledge acquired by the Jesuits during their mission in New France.

Considering the areas - many but still geographically limited - in which Bressani found himself working in his years in Canada[26], the accuracy of his map and the abundance of names and details of which he certainly had no direct experience - except the witnesses of his companions engaged in the

[25] Mention is made at p. 27 (*JR* XXXIX, pp. 36-37).

[26] Exception made for the period of captivity in Iroquois territory, between the south-east of Lake Ontario and in New Netherlands (April 29 - August 19, 1644), he travelled by river between Quebec and Huronia.

spread of the Gospel in regions adjacent to those where he was - put us in front of the problem of the sources he used. In addition to the annual relations, he certainly made use of the travel reports of the poet and lawyer Marc Lescarbot (1570 - 1641)[27] and of the most famous explorer of XVII century Canada, Samuel de Champlain (1574 - 1635)[28], still known today as *The Father of New France*. It is not to be excluded that Bressani knew these works already in the short period between the assignment to the Canadian Mission and his actual departure. As soon as he arrived, as we have seen, he caught up studying (and translating) part of the 1642 relations, certainly discussing with his companions also scientific observations (above all astronomical) regularly conducted by the other Fathers, with the precise intent of positioning their foster lands. But we will talk about this later. In addition to the study of the texts and the gathering of first hand witnesses of other Jesuits, Bressani could certainly observe manuscript cartographic attempts composed during the years of the mission, some of which plausibly went lost. At this point it will be necessary a clarification, however obvious: as the general idea of the map is based on what is contained in the Jesuit relations and other printed sources - in particular on the maps of North America and Eastern Canada published in the previous years, on all the *Amerique Septentrionale* (1650) and *Le Canada, ou la Nouvelle France* (1656) by Nicolas Sanson -, the inset containing the detailed description of the Huronia is based on manuscript sources, being said inset the first detailed printed representation of the mentioned region. As for the printed sources, the main detail that makes us lean towards the adoption by Bressani of the geographic model of Canada prepared by Sanson, is the shape given to the Great Lakes for the first time in 1650 (Fig. 3). This cartography, although being not the first where mention of all five lakes can be found, is the first where they have a familiar form, closer to their real shape than those previously known. Sanson's privileged sources for this map, as can be easily deduced from the nomenclature used, are precisely the Jesuit relations, and in particular that of Paul Ragueneau (1608 - 1680), Superior of the Missions since 1644, for the year 1647-8 and published in Paris in 1649; the first to contain a detailed description of the Great Lakes and the Niagara Falls[29]. Concerning Bressani's knowledge of the map of

Figure 3: Nicolas Sanson, *Amerique Septentrionale* (1650), inset of the Great Lakes area.

[27] *Histoire de la Nouvelle France*, three editions between 1609 and 1618.

[28] *Les Voyages* (the most important editions are those of 1612 and 1632).

[29] *JR* XXXIII, pp. 62-64: *Almost due South from the country of the same Neutral Nation, we find a great Lake nearly two hundred leagues in circumference, called Erie; it is formed by the discharge of the fresh-water Sea* [i.e. Lake Huron] *and throws itself over a waterfall of a dreadful height into a third Lake, named Ontario, which we call Lake Saint Louys* […]. *Leaving the Huron country, and proceeding toward the South, after a journey of thirty or forty leagues we come to Lake Saint Louys which is eighty or ninety leagues in length, while its average width is fifteen or twenty leagues. Its length is from the East to the West; its width from the South to the North. The discharge of this Lake Saint Louys forms a branch of the River Saint Lawrence - namely, that which is South of the Island of Mont-Real, and runs past Quebec.*

Ivi, pp. 148-150: *The great Lake of the Hurons, which we call "the fresh-water Sea", four hundred leagues in circumference, one end of which beats against our house of Sainte Marie, extends from East to West, and thus its width is from North to South although it is very irregular in form. The Eastern and Northern shores of this Lake are inhabited by various Algonquin Tribes - Outaouakamigouek, Sakahiganiriouik, Aouasanik, Atchougue, Amikouek, Achirigouans, Nikikouek, Michisaguek, Paouitagoung -, with all of which we have a considerable acquaintance. The last-named are those whom we call the Nation of the Sault, who are distant from us a little over one hundred leagues, by means of whom we would have to obtain a passage, if we wished to go further and communicate with numerous other Algonquin Tribes, still further away, who dwell on the shores of another lake* [i.e. Lake Superior] *larger than the fresh-water sea, into which it discharges by a very large and very rapid river; the latter, before mingling its waters with those of our fresh-water sea, rolls over a fall that gives its name to these peoples, who come there during the fishing season. This superior Lake extends toward the Northwest - that is, between the West and the North.*

Canada of 1656, questions arose in the past, but nobody seems to have realized that the *Accurata delineatio* is prefigured as a veritable "response" to the *Nouvelle France* of the *Geographe du Roi*, essentially because of two purely technical details that at first sight could pass unnoticed and which we will shortly talk about.

Manuscript maps were used instead, as well as for the representation of the Huronia, also, and more in general, for the indigenous toponymy. In particular, Bressani had at least seen, during his stay overseas, an anonymous map fortunately preserved until today: the *Description du Pais des Hurons* (Fig. 4), continuously updated in the period 1631 - 1651. With slight differences regarding the hydro-geological conformation of the region, the Bressani inset reproduces the outline of the areas between Georgian Bay and the right bank of Lake Huron in much the same way as observed in this map. The Bruce Peninsula is larger than it should be and stretching out into the Lake Huron, while Lake Simcoe (Oentaronk in Bressani and Oventarenk in the *Description*) is set too far in the north and too little extended. Considering the terminology adopted by Bressani, it is not unlikely that he also knew another map, the first ever to depict all the five Great Lakes, the *Nouvelle France* (c. 1641)[30]. However, this one is not particularly interesting for our study because is geographically based on previous maps (especially on Samuel de Champlain maps), in which the areas of the Great Lakes and Ontario in general are represented with strongly incorrect edges, fact certainly due to a still insufficient geographical knowledge of these environments. Instead, it is not known if Bressani was acquainted with a third manuscript map, the *Corographie du Pays des Hurons*[31], which shows the location of missionary villages during the period 1639-1648. François du Creux (1596 - 1666) took advantage of this map for the Huronia inset of his cartography of New France contained in *Historia Canadensis* (1664) [32].

Figure 4: *Description du Pais des Hurons* (c. 1631-1651). Courtesy Library of Congress (Washington), G3460 1651 .D4Vault.

[30] For a reproduction of this map vd. HEIDENREICH 1988, p. 68 and STECKLEY 1990, pp. 26-27.
[31] For a reproduction vd. HEIDENREICH 1966, p. 112 and TRIGGER 1976, p. 579.
[32] For a reproduction of the inset map vd. HEIDENREICH 1966, p. 110.

Mnemotechnic features of ethnographic and religious iconography

With a certain awareness of the sources used by Bressani we can finally move on to the iconographic analysis of his map. First of all, a banal but necessary distinction: the iconographic apparatus of the map can be divided into two groups, according to the their aim. On the one hand we find the representations for explanatory-descriptive purposes, on the other those for didactic-mnemonic purposes. The latter describes a precise symbology, clear result of the years of study and teaching of Francesco Giuseppe. The first group includes the faunal representations: the above mentioned whale and the sea monster (generic and common reference, although outdated at the time, to the dangers of the sea), the seal along the coast of Acadia and all the animals on the map. These are not new elements, rather they can be observed with a certain frequency already in the iconographic apparatus of the first edition of the *Voyages* of de Champlain: elks, beavers, skunks, bears and reindeers. To which we can add, as part of this group, the codified and self-explanatory elements such as stylized trees depicting areas with abundant vegetation or forests, or huts designed to indicate areas of cyclic residence of non-sedentary tribes. These are elements present in the cartography of New France since its origins, as will be clear by making a simple comparison with the first printed map of the territories of New France, inserted by Lescarbot in his *Histoire* (1609, Fig. 5). To the second group belong the human figures in action present on the west sheet. From top to bottom we have: a scene called *Chorea* where we observe a group of dancing men and women; a hunter with snowshoes in the act of shooting an arrow against an elk; near the coasts between *Nova Anglia* and *Novum Belgium* an *Armatus* (armed man), plausibly an Amerindian warrior; a scene of domestic life with three women intent on housework and the representation of the typical longhouse; immediately under we see five natives torturing a prisoner; a *Pagus*, profile of a fortified village; a *Concilium*, council of the elders; a group of three people (the representation of movements by land) and finally a couple in a canoe off the coast of *Virginia* (depiction of movements by river). All the illustrations refer to passages in the *Breve relatione* and contribute making of the Bressani's map a visual summary of it[33]. Although this particular has already been noted by all the scholars who have dealt with

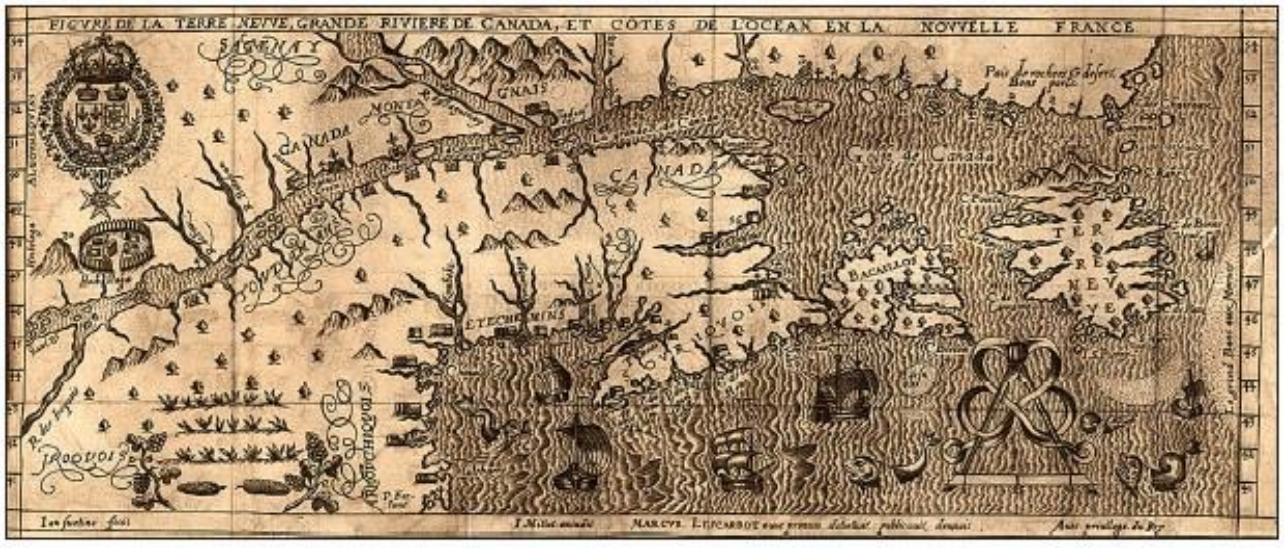

Figure 5: Marc Lescarbot, *Figure de la Terre Neuve, grande rivière de Canada, et côtes de l'Ocean en la Nouvelle France* (1609). Courtesy Queen Elizabeth II Library (Memorial University of Newfoundland, St. John's), G 3400 1609 L4 1989 MAP.

the map, no one has tried to explain why. If Bressani's desire was to produce an up-to-date and accurate cartography of the territories of New France, why did not he opt for a model similar to the most rigorous and strictly scientific one adopted by Sanson? Beyond the desire to publicize the events of New France in his homeland, why publish the map in Italy, where the most recent cartography of the Canadian

[33] Cf. CARDINAL 2004, p. 18-20.

territories was a simple portolan, without description of the mainland, published eleven years before the *Accurata delineatio*, by Sir Robert Dudley (c. 1573 - 1649) in his *Arcano del Mare* (*Secrets of the Sea*)?

The reason is of educational nature and Bressani shows his formative-programmatic intent much more in his map than in the *Breve relatione*. At the age of eighteen he began the period of regency teaching Grammar and Rhetoric. A fundamental part of the teaching of Rhetoric were the precepts relating to mnemotechnics, studied on classical texts, the most relevant being the *Rhetorica ad Herennium* (c. 90 BC), the *De oratore* by Cicero (106 - 43 BC) and the *Institutio oratoria* by Quintilianus (c. 35 - 96 AD). Mnemotechnics were used since ancient times to increase the natural faculties of human memory; in rhetorical context it allowed to master the topic of a discourse, recalling precisely all the points and purposes, with clear dialectical intentions. It is based on imaginative devices, the *loci* (places) and the *imagines* (pictures). While the former represent easily memorable places and points, the latter are the symbols and forms of representation of what one wants to remember, or to remind. In cartographic representations the role of the *loci* is acquitted automatically by the medium itself, while the *imagines* (in the case of Bressani the illustrations of the second group), are an immediately understandable representation of the topics treated and the facts narrated in the *relatione*, carried out in the places described by the map. From the *Rhetorica ad Herennium* comes a passage that can clarify the didactic aim of Bressani:

> *Docet igitur nos ipsa natura quid operteat fieri. Nam si quas res in vita videmus parvas, usitatas, cotidianas, meminisse non solemus, propterea quod nulla nova nec admirabili re commovetur animus; at si quid videmus aut audimus egregie turpe, inhonestum, inisitatum, magnum, incredibile, ridiculum, id diu meminisse consuevimus. Itaque quas res ante ora videmus aut audimus obliviscimur plerumque; quae acciderunt in pueritia meminimus optime saepe; nec hoc alia de causa potest accidere, nisi quod usitatae res facile e memoria elabuntur, insignes et novae diutius manent in animo. Solis exortus, curcus, occasus nemo admiratur propterea quia cotidie fiunt; at eclipses solis mirantur quia raro accidunt, et solis eclipses magis mirantur quam lunae propterea quod hae crebriores sunt. Docet ergo se natura vulgari et usitata re non exsuscitari, novitate et insigni quodam negotio commeveri. Imitetur ars igitur naturam, et quod ea desiderat id inveniat, quod ostendit sequatur. Nihil est enim quod aut natura extremum invenerit aut doctrina primum; sed rerum principia ab ingenio profecta sunt, exitus disciplina conparantur.*[34]

Thus, showing unusual, incredible, frightening images, allowed to effectively impress in memory the facts that those representations wanted to represent, to recall. And who, more than future missionaries, could have been in need of keeping in mind the cruelty of torture, the conformation of the villages or the agricultural and hunting practices of the indigenous people? Consequently, even those depictions to which the western man had become accustomed, as the natives dressed with traditional clothing, already present in the *Carte geographique de la Nouvelle Franse* (sic) of Samuel de Champlain of 1612, were proposed again by Bressani in an all new way. They were not inside a neutral and zeroed space (Fig. 6), represented according to an idealized model, but were relocated in their environment, in action

[34] *Rhetorica ad Herennium* III, 35-36 (CAPLAN 1954, pp. 218-221): *Now nature herself teaches us what we should do. When we see in everyday life things that are petty, ordinary, and banal, we generally fail to remember them, because the mind is not being stirred by anything novel or marvellous. But if we see or hear something exceptionally base, dishonourable, extraordinary, great, unbelievable, or laughable, that we are likely to remember a long time. Accordingly, things immediate to our eye or ear we commonly forget; incidents of our childhood we often remember best. Nor could this be so for any other reason than that ordinary things easily slip from the memory while the striking and novel stay longer in mind. A sunrise, the sun's course, a sunset, are marvellous to no one because they occur daily. But solar eclipses are a source of wonder because they occur seldom, and indeed are more marvellous than lunar eclipses, because these are more frequent. Thus nature shows that she is not aroused by the common, ordinary event, but is moved by a new or striking occurrence. Let art, then, imitate nature, find what she desires, and follow as she directs. For in invention nature is never last, education never first; rather the beginnings of things arise from natural talent, and the ends are reached by discipline.*

and in detail, to make their actions more understandable and immediately connote them to the facts narrated, in order to produce a "memorable" image, quite literally.

To complete the iconography of the map, which now rightly appears as a true missionary

Figure 6: Samuel de Champlain, *Carte geographique de la Nouvelle Franse* (1612), inset of the depiction of native people.

manifesto, the *offer* is still missing. The circumstances (social and historical) and the scene (geographical) have been clarified, while the method, the Gospel, does not need a place in the map, since its diffusion is the purpose of every missionary. What is offered to the missionary for his own evangelizing effort is perfectly symbolized by the two images placed beyond the map and between them opposing, both substantively and materially, being the one on the left top corner of the west sheet (Fig. 7) and the other on the bottom right corner of the east sheet (Fig. 8). The first one represents the converted Huron family. A man and a woman with two children, on bended knee, praying towards a cross emanating light. A classical expedient of Christian iconography is the divine light that guides in darkness, referring to the Gospel of John (8:12):

> *Πάλιν οὖν αὐτοῖς ἐλάλησεν ὁ Ἰησοῦς λέγων·ἐγώ εἰμι τὸ φῶς τοῦ κόσμου· ὁ ἀκολουθῶν μοι οὐ μὴ περιπατήσῃ ἐν τῇ σκοτίᾳ, ἀλλ' ἕξει τὸ φῶς τῆς ζωῆς.*[35]

This is the ultimate goal of the missionary, to save the soul of non-Christians, illuminating them with the light of true religion. The second illustration, extremely famous, is the most important and detailed from a symbolic point of view. The central scene described hides, in addition to important details, other small scenes developing on the left side, in the background, which, although representing events occurred in different places and moments than those narrated in the foreground, for the commonality of the treated themes, are, we could say, contained in a single

Figure 7: *Novae Franciae Accurata Delineatio 1657*, inset of the Huron family.

[35] Jn 8:12 (*NT* 1933, p. 339): *Then Jesus spoke again to them, saying "I am the light for the world; he who follows me will not walk in the darkness, but will have the light of life".*

Figure 8: *Novae Franciae Accurata Delineatio 1657*, inset of the martyrdom of Brébeuf and Lalemant.

temporal plane. In the foreground we see Jean de Brébeuf, founder of the Huron Mission, whom for years had been engaged in preaching and conversion, among the few who had perfected the knowledge of Huron language and whose contribution had been indispensable for the success of the Jesuits in New France. Next to him there is the confrere Gabriel Lalemant (1610 - 1649), his assistant.

The facts illustrated date back to the final phase of the war between Iroquois and Hurons, in the period in which the former were carrying out the destruction of villages and missions, begun in July 1648. The two Jesuits were captured after the taking of the village of Saint Louis, March 16, 1649 and tortured to death for many hours. The scene is not idealized, as might be expected, but is based on testimonies collected by the Jesuit Fathers and bequeathed by them[36]. In this depiction the Amerindians[37] prepare and perpetrate various tortures. While some of them wound or mutilate the prisoners (a Mohawk warrior can be seen in the act of cutting pieces of meat from the left arm of Brébeuf, to eat them), others deal with cauldrons of boiling water to be poured on the heads of the Jesuits as an act of mockery of Baptism, or roast axe heads to be tied around the missionaries necks. After their death, the following day, as a ritual act plausibly due to the stoicism and courage shown during martyrdom (and to the importance that even the Iroquois attributed to the figure of Brébeuf), the Amerindians resected and ate their hearts. The iconographic representation is of rare descriptive power, so it fits perfectly into the mechanism of *amaze to remember*, typical of classical mnemotechnics. In the background are shown the scenes of martyrdom and death of other Jesuits and some of their *données* (laymen under contract with the missionaries), in a period between 1642 and 1656 in more places[38]. We can see (from bottom to top) in a first scene, Isaac Jogues (1607 - 1646) with Jean de Lalande (d. 1646) and René Goupil (1608 - 1642). The first two were

[36] *JR* XXXIV, pp. 138-157 and BRESSANI 1653, pp. 107-114 (*JR* XXXIX, pp. 244-263).

[37] Judging by the clothing, the natives in this depiction are from two of the five Iroquois nations: Mohawk and Oneida.

[38] This is a proof of the importance given by Bressani to the role of the missionaries. He kept updating the map and its iconographic apparatus quoting facts happened after his final return in Europe in 1651.

killed respectively on October 18 and 19, 1646, in the whereabouts of the Mohawk village of Ossernenon (today Auriesville, NY), the third one in the same place, but in September 1642. Higher up we observe Anne de Noüe (of whom we have already said), Charles Garnier (1606 - 1649) and Noël Chabanel (1613 - 1649), murdered on December 7 and 8, 1649, near the mission of Saint Jean-Baptiste (in the territories of the Petun[39]) and Antoine Daniel (1601 - 1648), first martyr of the Huron Mission, shot to death by the Iroquois during the events related to the destruction of the mission of Saint Joseph (today Hillsdale, Simcoe County, Ontario), on July 4, 1648. In a small illustration added in the upper left corner we finally see Jacques Buteux (1600 - 1652), killed on May 10, 1652, near Trois-Rivières and Léonard Garreau (1609/10 - 1656), murdered near Montreal on September 2, 1656.

Bressani's intent here is clear, desiring to pay tribute to the memory of those among his confreres who perished in the exercise of the diffusion of the Gospel, wishing at the same time to spread the facts, graphically tracing their deeds enhancing the story of their successes and of their tragic deaths narrated in the martyrology that forms the third part of the *Breve relatione*. To better succeed in his intent, he uses symbolic expedients, rendered graphically in an excellent way by the engraver. These expedients are basically two: the first is what would appear to be the figure of Bressani himself[40], hidden in plain sight, the second is the curious game of glances between Lalemant and Brébeuf on the one side and their executioners on the other. Observing carefully, behind Brébeuf, can be seen a crouched, half-naked man, who contemplates his brother with a pensive look at the moment of his torture. Considering his haircut and beard, and recalling how close to death Bressani came during his captivity in 1644, recognize the Roman Jesuit in this character does not seem to be such a ventured hypothesis. It is not unlikely that he would rightly recall his sacrifice (which cost him several phalanges and an unspecified number of tortures), certainly not for vanity, but to show something far more important in the eyes of a missionary. Bressani (hypothesizing that it is him) is not seen depicted while tortured and mutilated, but in the act of observing, almost in a prayerful pose, his mentor in New France, in what, rather than being considered his darkest hour, could be seen as his *election to martyrdom*. According to the traditional theology of martyrdom, a distinction is made between *death in hatred of faith* and *death as witness of love for Christ*. For the Canadian martyrs as depicted by Bressani, there is as much a middle ground as an overcoming of both. By approaching martyrdom as an imitation of the Master by the Disciple, just as Jesus Christ's death is an act of atonement for man's sins, the martyr is *chosen* for martyrdom by renewing the teaching of Christ, becoming an example of absolute charity. It is not by chance (and here we come to the second detail) that only the two martyrs look before them, while the natives, rather than look elsewhere, seem unable to see something granted only to the two Jesuits. There are those who look up to the sky, as the second native from the left or the first from the right, who directs the gaze towards the martyrs, as the second and third from the right or even who is looking his own back, like the warrior who is tormenting Lalemant with a dagger. Only Brébeuf and his companion can look further, *outside* the map, beyond a purely earthly context - once they have reached the mimesis with the sacrifice of Jesus Christ -, perhaps in contemplation of a light similar to that in direction of which the Huron family prays in the illustration discussed above. It should however be made clear that, although hypothetical, such a vision of martyrdom - as an imitation of Christ, a manifestation of sacrificial love aimed at an all-encompassing demonstration of charity - has been codified only during the last century with the Second Vatican Council[41], even if

[39] Also called Tobacco People. They were a historical nation closely related to the Huron people, who referred to them as Tionontati (*On the other side of the mountain*).

[40] Hypothesis firstly presented in CARDINAL 2009, p. 40.

[41] As shown in the second of the four Dogmatic Constitutions of the Council, *Lumen gentium*, 42: *Cum Iesus, Dei Filius, caritatem suam manifestaverit, animam suam pro nobis ponendo, nemo maiorem habet dilectionem, quam qui animam suam pro Eo et fratribus suis ponit (cf. Io 3:16; Io 15:13). Ad hoc ergo maximum amoris testimonium reddendum coram omnibus, praesertim persecutoribus, aliqui christiani iam a primo tempore vocati sunt et semper vocabuntur. Martyrium igitur, quo discipulus Magistro pro mundi salute mortem libere accipienti assimilatur, Eique in effusione sanguinis conformatur, ab Ecclesia eximium donum*

already in the Gospels and especially in John (often quoted by Bressani in the *Breve relatione*), there are frequent references to the teachings of Christ about the *circulation of love* from the Father to the Son and from this latter to mankind, to whom must be preserved and spread, and about how hatred - like the one that leads to martyrdom - is due to the lack of knowledge of Christ's *message of love*. In this regard it will suffice to quote two passages from John 15 for explanatory purposes:

> *καθὼς ἠγάπησέν με ὁ πατήρ, κἀγὼ ὑμᾶς ἠγάπησα· μείνατε ἐν τῇ ἀγάπῃ τῇ ἐμῇ. ἐὰν τὰς ἐντολάς μου τηρήσητε, μενεῖτε ἐν τῇ ἀγάπῃ μου, καθὼς ἐγὼ τοῦ πατρός μου τὰς ἐντολὰς τετήρηκα καὶ μένω αὐτοῦ ἐν τῇ ἀγάπῃ.*[42]

> *εἰ ὁ κόσμος ὑμᾶς μισεῖ, γινώσκετε ὅτι ἐμὲ πρῶτον ὑμῶν μεμίσηκεν. εἰ ἐκ τοῦ κόσμου ἦτε, ὁ κόσμος ἂν τὸ ἴδιον ἐφίλει· ὅτι δὲ ἐκ τοῦ κόσμου οὐκ ἐστέ, ἀλλ' ἐγὼ ἐξελεξάμην ὑμᾶς ἐκ τοῦ κόσμου, διὰ τοῦτο μισεῖ ὑμᾶς ὁ κόσμος. μνημονεύετε τοῦ λόγου οὗ ἐγὼ εἶπον ὑμῖν· οὐκ ἔστιν δοῦλος μείζων τοῦ κυρίου αὐτοῦ. εἰ ἐμὲ ἐδίωξαν, καὶ ὑμᾶς διώξουσιν· εἰ τὸν λόγον μου ἐτήρησαν, καὶ τὸν ὑμέτερον τηρήσουσιν. ἀλλὰ ταῦτα πάντα ποιήσουσιν εἰς ὑμᾶς διὰ τὸ ὄνομά μου, ὅτι οὐκ οἴδασιν τὸν πέμψαντά με.*[43]

Borrowing the terminology from the *Rhetorica to Herennium*[44] and the *De oratore*[45] and bearing in mind the potential complementarity of the two images, we are dealing here with a perfect example of *imagines agentes* (pictures in action). The visual impact of them is absolute, therefore the remembrance of what they represent is guaranteed. Thus what exists of exceptional and terrible falls within the normal course of events and - according to what the *forma mentis* of a XVII century Catholic missionary could have implied - in the ineffable yet organized design of God's will.

Pretending to endorse for just a moment those that must have been the dreams of Bressani, we can see how the whole map is pervaded by a subtle but constant sense of hope for a future victory of the Gospel. In fact, if we read it as a book page, the first image we encounter is that of the Huron family in prayer, followed by the *stage* in which this scene should have taken place (the Huronia inset), continuing with the map, completed by martyrdom, which in this perspective does not provide exclusively negative connotations. This sense of hope seems to be reaffirmed by the choice of Bressani to indicate on the map the places of residence of Europeans (colonial villages and strongholds) and, with a small cross, the most important missions. But what was the point in indicating, in a 1657 map, Sainte-Marie among the

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supremaque probatio caritatis aestimatur. Quod si paucis datur, omnes tamen parati sint oportet, Christum coram hominibus confiteri, Eumque inter persecutiones, quae Ecclesiae numquam desunt, in via crucis subsequi.
Since Jesus, the Son of God, manifested His charity by laying down His life for us, so too no one has greater love than he who lays down his life for Christ and His brothers (cf. Jn 3:16; Jn 15:13). From the earliest times, then, some Christians have been called upon - and some will always be called upon - to give the supreme testimony of this love to all men, but especially to persecutors. The Church, then, considers martyrdom as an exceptional gift and as the fullest proof of love. By martyrdom a disciple is transformed into an image of his Master by freely accepting death for the salvation of the world - as well as his conformity to Christ in the shedding of his blood. Though few are presented such an opportunity, nevertheless all must be prepared to confess Christ before men. They must be prepared to make this profession of faith even in the midst of persecutions, which will never be lacking to the Church, in following the way of the cross.

[42] Jn 15:9-10 (*NT* 1933, p. 369): *Just as the Father has loved me, I have loved you as well; abide in my love. If you keep my commandments, you will abide in my love; just as I have kept my Father's commandments and abide in his love.*

[43] Jn 15:18-21 (*NT* 1933, p. 370): *If the world hates you, understand that it has hated me before it hated you. If you were of the world, the world would love its own; but because you are not of the world, but I chose you out of the world, because of this the world hates you. Remember the word that I said to you, "A slave is not greater than his master." If they persecuted me, they will also persecute you; if they kept my word, they will keep yours as well. But all these things they will do to you for the sake of my name, because they do not know the one who sent me.*

[44] III, 37 (CAPLAN 1954, p. 220).

[45] II, 359 (SUTTON; RACKHAM 1942 I, p. 470).

Hurons, the main residence of the region, burned by the missionaries on May 15, 1649, in order not to see it fall into enemy hands, or the island of St. Joseph (today Christian Island, north-west of Bruce Peninsula, Lake Huron), where during the winter between 1649 and 1650 the Hurons were literally decimated by hunger and disease? In our opinion this is but a further detail which indicates future missionaries as hidden dedicatees of Bressani's works. They were the ones who inherited the task of carrying out evangelization in New France, and perhaps succeeding in continuing the work of their predecessors in Huronia, now in the hands of the Iroquois. We need to add to that the desire to provide a tool as accurate and up-to-date as possible; thus we find indicated missions that at the time of the journey of Bressani still did not exist. It is the case of Sainte-Marie among the Iroquois (Gannentaha, located on the Lake Onondaga, near today Siracuse, NY), where the Jesuits established a mission between 1656 and 1658 and that at the time of drafting of the map did not have a name yet, so we find it indicated by a little cross, south-east of Lake Ontario.

Bressani's contribution in the longitude quest

We will now discuss the scientific data collected by Bressani during the years spent in New France and used for the preparation of the *Accurata delineatio*. A comprehensive study of this data is now possible thanks to a particular specimen of his map, preserved in Italy and rediscovered a few years ago by the Canadian history of cartography scholar Louis Cardinal[46]. In this specimen we can see a paper appendix pasted to the bottom (Fig. 9), where was printed the exact date of publication, a dedication, a detailed descriptive legend, as well as Bressani's signature (which certifies once and for all the paternity of this cartography). We report the text of this addendum according to the excellent English translation of Cardinal, to which the merit of the rediscovery is to be recognized. This occasion has given us the opportunity to reconstruct the cartographic methods followed by Bressani:

> *To the most illustrious Lord and most honourable master, Lord Count Vincenzo Marescotti.*
>
> *To a Knight with all virtues, and all loyal to France, I dedicate new France. It cost me ten years of difficult travels; however, I estimate well used every toil and hardship that served me to be able now to have the honour of dedicating some results to the merit of your most illustrious Lordship. I am sorry that my wanderings were too limited, and in this scantiness, not proportionate is the gift, that I am making of a piece of the World to such a Knight, whom Fortune has wronged by not giving the Monarchy of it, whereas Nature, and Virtue, and indeed the Author of Nature, the centre of all Virtues, provided him the talent and merit enabling him to command more than one world.*
>
> *And with all reverence I constitute myself for ever of your most illustrious Lordship your most devoted and most loyal servant. Franc. Gios. Bressano of the Society of Jesus.*
>
> *At Bologna 11th January, 1657.*
>
> *Other maps of new France have been issued but none with the true meridians and parallels nor exact in relation with the Mediterranean countries. Mr. Champlain a knowledgeable man was not much on the road and went rapidly without the instruments and the time necessary to make the due observations. The author of the present spent more than ten years with compass and quadrant in his hands, and observed diverse eclipses, with exactness of minutes and seconds, that he compared with those that at the same time the most learned and most accurate Father Riccioli of the Society of Jesus was observing at Bologna, and received from prominent Astronomers of Europe the assessment that there was with them nothing wrong. It is believed that in conformity with the calculations of the afore*

[46] Vd. CARDINAL 2009. The map is preserved at the Archivio di Stato di Modena (*Mappario Estense*, Mappe, n. 9).

praised Father, and based upon a number of eclipses, Bologna is 36 degrees away from the island of Palma [i.e. San Miguel de La Palma, Canary Islands]*, Rome 39 degrees, and Paris 25 degrees. Some believed that the magnetic needle on this side of the Azores always declined toward the East; however, the experience conducted not only at sea but also on land and recently at Bologna by the Author in presence and with the assistance of learned Persons, and very accurate in their observations, teaches the contrary; since this was done the observation has been repeated in the Countryside away from Iron materials, Bricks and Buildings, it declines toward the West about one degree, as the reading of six different magnetic needles showed, then becomes animated, shifting several times without increasing by much because it has not enough strength, oscillates like this in doubt of when to come to a standstill, and does this here and there which caused many to say that it was inconstant in its declination; But, from there on yes, the Author always have found it declining toward the West. On the Meridian of the Island of Pico* [Ilha do Pico, Azores] *which in the present Hypothesis is 351 degrees it does not decline sensibly, but soon after so much so, that at Kebek which is on the 47th parallel and the 318th Meridian it declines by 16 degrees; but from there toward the West it diminishes until the land of the Hurons on the 44th parallel and 46 minutes and the 304th Meridian where it declines no more than 12 degrees, and in the parts further West of the map little more than 10 degrees. The St. Lawrence River is covered with many islands, here are shown only the main ones, as it is difficult on a small map like this to include all of them. Here you also see real life Dances, Councils, Costume, Dwellings, and Forts of the Natives and how they inflict torture on those who happen to fall into their hands, just as promised by the Author in his Relation about the Land published in 1653. The names of the smaller Rivers, Islands and Lakes are in the Native Languages, are little necessary, and as they would uselessly clutter the map, the Author kept them to himself. The Colonies, and Forts of the Europeans are signalled by Crosses, and those of the Natives by their proper names, and not in one place only, because every eight to ten years, they move, and some of them not unlike the Arabs, and the Tartars err all the time. The limits of the country would have been shown if any were known, but I have seen none so far; all over are Forests, Mountains, Hills, Water, and Plains. Here is marked only one range of mountains of which is known the length of more than one thousand miles, similar to the Pyrenees in Spain, the Alps in France and the Apennines in Italy. The Sandbanks which are noted are so deep under the water that there is no Ship that should have fear of them, something very special. Are shown one Whale, a marine Wolf, or marine Calf, which are found in abundance in the Ocean; and on land a Bear, a Beaver, a Skunk, a wild Cow, which are found there by the hundreds, and a Large beast, of which, in addition to other beasts already known to us, the country abounds. The numbers, you will see along the St. Lawrence River, refer to falls, or extremely swift currents of the said river. On top of the map in a larger frame is the land of the Hurons because it can scarcely be identified in its proper place, with two Natives, a Man, and a Woman well dressed, as if going to a Celebration or to Church, they represent two Neophytes in the act of praying. The map is small, however in all has in length, i.e. from East to West one thousand and five hundred and thirty miles; in width, i.e. from the South to the North yet again one thousand miles, which forms the space, or an area close to one million, and five hundred and sixty thousand and six hundred* [square] *miles of land.*

Enjoy the fruit of my efforts, and live happy.

The construction of a sinusoidal projection, as the one Bressani used for his map, like every cartographic projection, is based on the knowledge of two different groups of data: latitude and longitude. Thus, $x = (\lambda-\lambda_0) \cos \varphi$ and $y = \varphi$, where φ is the latitude, λ is the longitude and λ_0 is the Prime Meridian (which in ancient cartographies different from planispheres differs from a Central Meridian, the only one perfectly perpendicular to the parallel lines describing latitude). As a consequence, on the map, as in reality, the length of each parallel is proportional to the cosine of the latitude. The shape of a terrestrial

Figure 9: *Novae Franciae Accurata Delineatio 1657*, inset of the addendum.
Courtesy Archivio di Stato di Modena, *Mappario Estense*, Mappe, n. 9.

planisphere will therefore result from the area between two rotated symmetric cosine curves. This type of projection is called equivalent, or homolographic. In it the scale is constant but the shapes of the lands undergo slight distortions with the progressive distancing from the Prime Meridian, unlike conformal

projections, or isogonic (e.g. the Mercator Projection), where the shapes are correct, but the scale varies. While the former is preferred by geographers and scientists, the latter is prerogative of nautical maps, as it allows the representation of loxodromes (lines with constant track angle) with straight segments.

Considering the scientific equipment available at the time, if calculating the latitude with an acceptable margin of error should not be particularly complex, the calculation of longitude was a whole other story and was usually extremely difficult to find it even within a few degrees. The "easiest" way was to transport a clock running on time from a standard meridian. Then local time, found with astronomical observations at the arrival location could have been readily compared with the standard time by the clock and the difference in time converted into longitude (by the relation 4 minutes = 1 degree), but the accuracy of a timepiece after an oceanic voyage was found to be basically inexistent up until the middle of the XVIII century.

> *In the absence of accurate chronometers on earth, navigators looked to the sky for celestial clockwork. All manner of phenomena were proposed at various times - variable stars, the motion of the satellites of Jupiter and Saturn, even meteors, but the most obvious celestial clock was the moon* […]. *To find longitude at sea from the moon, a navigator needs tables predicting the moon's position relative to the stars as seen from some standard meridian.* […] *A land-based observer, however, does not have to have tables unless he wants to know his longitude immediately. Tables could be avoided by timing some event at two separate places.*[47]

Bressani calculated the longitude with both ephemeris at his disposal and comparing data from observations of lunar eclipses made by him between 1643 and 1649 with those of European colleagues. Thanks to the information contained in the addendum of the specimen of his map preserved in Modena, we can show that - unlike what was previously hypothesized - the calculations he made, considering the scientific instruments available at the time, present a very low margin of error. As we have seen, Bressani's dedication to the mission was clear from the beginning. As soon as he arrived he drafted the Italian translation of the relations for the year, and it is precisely in the second part of the Huron Mission report, written by Jérôme Lalemant (1593 - 1673), that we find mention of the ephemeris used by the Jesuit Fathers in New France[48]. These are the work of Noël Duret (1590 - 1650), mathematician and astronomer who, thanks to the intercession of Cardinal Richelieu (1585 - 1642), obtained the title of Court Cosmographer. Duret dedicated his astronomical tables to him (*Tables Richeliennes et Parisiennes*), based on the *Rudolphines* by Johannes von Kepler (1571 - 1630) and the tables by Johan Philip Lansberg (1561 - 1632). Bressani certainly did not lack the appropriate mathematical training necessary to make astronomical observations, keeping in mind, as already mentioned, that, as a teenager, he studied Mathematics with Grienberger at the *Collegio Romano*, and in fact the ones he performed are the most accurate observations made in Canada in those years. Once arrived in Quebec, he had the opportunity to investigate about the observations made before his arrival directly from those who carried them out. Unfortunately, the only apparently reliable data known to us about the eclipse of which mention is made in 1642 relation[49], the one of April 14, it would seem to be the hour of the end, calculated by Lalemant near the village of Saint Joseph (which is Sillery, a former city today part of Quebec, and not the homonymous village located in the Simcoe County) between 10.08 and 10.09 (24 hrs format). This measurement, compared to Duret's ephemeris[50], placed Sillery at 5h7m30s away from Paris, then just a little less than 77° of longitude [i.e. c. 73°35']. The following year, Bressani was right in the nearby of Sillery when a new lunar eclipse occurred on the night between April 3 and 4. We know that he wrote a

[47] BROUGHTON 1981, p. 176.
[48] *JR* XXIII, pp. 178-179.
[49] Ibidem.
[50] DURET 1641 VII, p. 142.

complete report according to observations made with the naked eye, making the appropriate calculations using the oscillations of a pendulum and the inspection of the stars of Ursa Major. Unfortunately, the calculation tables, which he kept with him, were destroyed on the occasion of his capture by the Iroquois, in 1644. However, the data relating to the beginning and end of the eclipse, 21.12 (4/3) and 01.15 (4/4) are preserved, thanks to a letter sent by the Jesuit in 1645 to the French colleague, mathematician and astronomer Pierre Gassendi (1592 - 1655):

> *Invisens me etiam sub initium anni 1645. R. P. Franciscus Bressanius Societatis Jesu, retulit se cum esset Silleij* [Sillery] *ad KEBECI sesqui leucam versus Africum, observasse Eclipseos initium hor. 9 min. 12. Finem hor. 13 min. 15. Immersionis totalis, & recuperationis lucis satis probe non meminit, ob amissas schedulas apud Barbaros, a quibus captus, digitis plerisque truncatus, pedibus perforatus, aliisque tormentis divexatus per mensem fuit, quousque cremandus foemina cuipiam traditus, redemptus ab Hollandis fuit persoluto foeminae pretio Scutatorum circiter centum.*
>
> *Attendit ad Lunam sine Telescopio; hac tempus provabit, tum automatis, tum alternatis penduli plumbi vibrationibus, tum inspectione Stellarum Cynosurae. Altitudinem Poli esse illeic dixit grad.* [omissis] *min.* [omissis][51].

The decision to send these data to one of the best Jesuit scientists of the time was certainly dictated by the awareness of not being able to rely on the ephemeris of Duret, which for the eclipse of April 3, 1643, just went bananas, assuming the beginning for 19.25,31 and the end for 21.35,27[52]. If the data provided by Bressani to Gassendi are to be considered reliable, comparing these with those calculated from the latter in Paris - on the basis of the time gap relating to the beginning of the eclipse - we get an excellent result, with a variation of 4h57m30s that equals to a distance of c. 74°30', with a margin of error of about one degree.

The problem encountered with the ephemeris occurred again in 1646 and this time Bressani and his companions found themselves literally without terms of comparison, because the eclipse occurred on the night between January 30 and 31, had not even been foreseen by Duret. To avoid this inconvenience, the Jesuit wrote a very detailed letter, sent not only to Gassendi and others, but also to the most famous Jesuit researcher of the time, Athanasius Kircher (1602 - 1680). Unfortunately, this missive seems to have gone lost, but we know that Kircher forwarded it to another confrere, who probably directly helped Bressani in the construction of the map, once back in Italy: we are talking about the astronomer Giovanni Battista Riccioli (1598 - 1671). The edition of a few excerpts of this letter as found in the *Almagestum novum* of Riccioli[53], however, presents some misprints, therefore we take advantage of those as reported by Gassendi:

> *Literas accepi e media Huronum Septentrionalis Americae regione, ac hospitio Patrum Societatis Iesu, locoque Sancta Maria dicto* [Sainte-Marie among the Hurons] *datas ab optimo Bressano, cuius iam ante est facta mentio* [ivi, p. 444]. *Quibus prescribit usum se eximio Telescopio, observasse.*
>
> *Initium inumbrationis levissimum hor. 10. min. 25. ante mediam noctem, sensibiliorem inumbrationem hor. 10. min. 30.*
>
> *Initium Eclipseos hor. 10. min. 45.*
>
> *Digitos Eclipseos fere sex hor. 11. min. 12.*
>
> *Totalem obscurationem hor. 11. min. 44.*

51 GASSENDI 1658 IV, p. 444.
52 DURET 1641 VIII, p. 3.
53 RICCIOLI 1651 I, p. 384.

> *Caetera nubibus praerepta: nisi quod hor. 2. min. 25. post mediam noctem praebens se in conspectum Luna nullum vestigium obscurationis habuit.*[54]

We know that the eclipse began at 22.45, at 23.13 the shadow of the Earth covered a half of the Moon (six digits) and by 23.44 the total immersion was reached. The rest of the phenomenon was not observed due to cloud formations that covered the satellite. Bressani adds that at 02.25 of January 31, when the sky was clear again, the eclipse was already over. Gassendi certainly communicated his observations made in Paris to the colleague overseas, since the variation of distance resulting from their calculations seems to be the one used by Bressani for the placement of Sainte-Marie among the Hurons in his cartography, as we will show soon. Gassendi records the beginning at 04.15,30 (01/31), six digits immersion at 04.43 and total immersion at 05.11.15/05.12. Comparing these data with the previous ones we can find an average variation of c. 5h30m, that means a distance of 82°30' of longitude between Sainte-Marie and Paris. This time as well the margin of error is minimal, being the real distance equals to c. 82°11'33".

Bressani's last observations are related to the eclipses of May 25 and November 18, 1649, while he was again in Quebec, sent by the Father Superior Paul Ragueneau (1608 - 1680) as ambassador to the governor of New France, asking for help against the Iroquois who had brought devastation and death to the territories of the Hurons, forcing them to the disastrous retreat on Christian Island[55]. Of the eclipse of May 25, observed in Trois-Rivières, we know beginning (07.48) and end (10.45)[56], but we do not find these data compared with observations performed in France or Italy, while the data on the eclipse of November 18 seem to be those that were used by Bressani for the placement of Quebec on his map. These data set the beginning of the phenomenon at 12.12, total immersion at 13.30 and end at 16.25. This time, however, the distance was not calculated towards Paris but towards Bologna, since the result, based on the total immersion observed by Riccioli in Bologna at 18.45.50, implies a variation of 5h15m50s, equal to c. 79° [i.e. 82°33'34"] [57].

Less than two years after these last observations, Bressani returned to Italy, where he became an itinerant preacher. In 1656 he was in Bologna, where he spent the winter[58]. Among the reasons that led him to stay for a period in the Emilian city, even if the only evidence to support this hypothesis is the addendum of the map, we can take into consideration the possibility of a meeting with Riccioli himself, who at the time was teaching at the College of Santa Lucia, in Bologna. This hypothesis is supported by the fact that the calculations included in the addendum foreseen the knowledge of data relating to astronomical observations made by Riccioli and disclosed only from 1665 with the publication of the *Astronomia reformata*.

As we mentioned before talking about the projection used by Bressani, the choice of a Prime Meridian is essential for the construction of a map. Nowadays Greenwich plays this role, and so it is since 1884, but for the previous centuries the question is much more complex. Each country had its own reference meridian, until France began to take an interest in ocean explorations and, in the farsighted attempt to cause less confusion in the drafting and reading of maps, a commission of astronomers, geographers, cartographers and navigators was appointed to solve the problem. The experts, with a taste for Ptolemaic geography, chose as Prime Meridian the one passing through Cabo de Orchilla, the western end of the island of El Hierro (the most westerly of the Canary Islands), as calculated at exactly 20° from Paris [i.e. 20°23'9"]. The decision became law on July 1, 1634[59], thus, from that moment on, on the maps produced in France (and throughout Europe when not otherwise specified) El Hierro figures at 0°/360°

54 GASSENDI 1658 IV, p. 458.
55 BRESSANI 1653, pp. 123-126 (*JR* XL, pp. 44-57); LATOURELLE 1999, pp. 65-68.
56 RICCIOLI 1665 I, p. 104.
57 Ibidem; *ACADÉMIE* VII.2, pp. 710-711.
58 LATOURELLE 1999, pp. 83-84.
59 On the problem of the Prime Meridian and the French Commission of 1634 vd. LAGARDE 1979.

of longitude[60]. It was, however, an almost exclusively graphic expedient, since the longitudes were usually calculated from a remote place (e.g. Quebec) to an astronomical observatory (e.g. Paris) and, given the difficulty of the necessary operations, as we have seen, it was not said that the maps were built on mathematical calculations implying only one reference meridian - with all the possible errors that this decision involved -, even if graphically it was possible to adopt only one. Not to mention that the same distance El Hierro-Paris as equivalent to exactly 20° was not commonly accepted: just think of Duret himself, who placed the French capital at 23°30' from Cabo de Orchilla[61]. A perfect example of this attitude is the Bressani map. From the reading of the addendum we can deduce that, on Riccioli's advice, Bressani established as Prime Meridian the one passing from Santa Cruz, the main harbor of San Miguel de La Palma, which is quite obvious, having been Riccioli the only scientist to use La Palma as Prime Meridian throughout the second half of the XVII century[62]. Here the problems begin because, as mentioned earlier, as far as appropriate calculations show that the *Accurata delineatio* is built on the axis Sainte-Marie - Quebec, the longitudes are calculated from the rounded down average distance between Sainte-Marie - Paris and Quebec - Bologna. In the addendum Sainte-Marie is located at 304° and Quebec at 318°, therefore at 56°W and 42°W of La Palma. To these are added the distances from the Canary island to the two European cities used for calculations (to which Bressani adds Rome, with a mixture of nostalgia for his native land and a clear reference to the capital of the Catholic world), so we find Paris and Bologna respectively at 25° and 36° away from La Palma [i.e. 20°15'24" and 29°04'51"]. Precisely because of these conspicuous miscalculations - made by Riccioli and not by Bressani - the longitudes reported on the map are incorrect despite the calculations made for the eclipses are extraordinarily close to reality. Running the numbers we deduce that:

> Sainte-Marie – Paris (eclipse of January 30/31, 1646, observations by Bressani and Gassendi): c. 5h30m = 82°30'-25° (distance La Palma – Paris according to Riccioli) = 57°30' (distance Sainte-Marie – La Palma, approximated to 56° on the map);
>
> Quebec – Bologna (eclipse of November 18, 1649, observations by Bressani and Riccioli): 5h15m50s = c. 79°-36° (distance La Palma – Bologna according to Riccioli) = 43° (distance Quebec – Bologna, approximated to 42° on the map).

Therefore, according to the calculations of Riccioli, considering the distance between Paris and Bologna as describing a longitudinal arc of 11° [i.e. 8°59'27"]:

Sainte-Marie – Paris 82°30'
Sainte-Marie – Bologna 93°30'
Quebec – Paris 68°
Quebec – Bologna 79°
Average distance Sainte-Marie – Quebec
82°30'-68° = 14°'30'
93°30'-79° = 14°30°

These measures were finally rounded down until a distance of 14° between Sainte-Marie and Quebec was obtained, for at least two reasons. The first is strictly graphical, to indicate in the map only whole measures

[60] Nowadays the longitude degrees are divided in 0°-180°W and 0°-180°E of Greenwhich. In old maps longitude degrees are shown as 360°-180°(W) and 0°-180°(E) of El Hierro (or other Prime Meridian).
[61] DURET 1635 p. 93.
[62] RICCIOLI 1661, p. 322-324. However, somewhere between 1657 and 1661 he must have changed his mind since in this work we can find a table of measurements of magnetic needle declinations and geographical coordinates with Ilha do Pico (Azores) as Prime Meridian (pp. 352-358).

in the longitude scale, the second is due instead to the years of observations and hypotheses formulated by the Jesuits during the mission. In at least two occasions, Bressani mentions the longitudinal arc describing the distance from Sainte-Marie to Quebec, a first time in the letter of 1645 to Gassendi, where he indicates it as being equal to c. 10°[63]. A second time, and in this case we can observe the depth of Bressani's geographical and astronomical skills, he states that Quebec and Sainte-Marie were no more than 35 minutes away (8°45') from each other[64]. This data is exceptional, because the error is of only 8', being said distance equal to 8°37'. Round down all the data, in order to obtain a distance Quebec-Sainte-Marie as equal to 14°, implied these calculations by Bressani and Riccioli:

Sainte-Marie – Paris 81°
Sainte-Marie – Bologna 92°
Quebec – Paris 67°
Quebec – Bologna 78°
Average distance Sainte-Marie – Quebec
81°-67° = 14°
92°-78° = 14°

The Quebec Singularity: Bressani v. Sanson

As observed, to design a cartographic projection adapting data referring to two different reference meridians, means to use data obtained through the calculation of an average, which, if not perfect, would have given an approximation of the exact data, at best. All the explanations relating to the longitudes provided by Bressani in the addendum to correctly read the map, are used to give meaning to values that, when analyzed by a cartography expert, would have otherwise seemed at least abstruse. The idea of the Jesuit at the base of the longitudinal construction of the map was, moreover, precisely that of correct those which in his opinion were errors, present in the maps of New France preceding his own, and above all, in *Le Canade, ou Nouvelle France* (Fig. 10), published by Nicolas Sanson in 1656. Just a few months passed between the publication of these two maps, yet enough for Bressani to hide in the longitude scale that frame his one, an answer to the *Geographe du Roi.*

In addition to a Prime Meridian for the calculation of the longitude, a sinusoidal cartographic projection needs a Central Meridian, *around* which the map is built, the only one, as already mentioned, to be perfectly perpendicular to the lines describing the latitude. This Central Meridian is always dropped onto a place of which we are sure to know exactly the coordinates, in order to have a fixed point, a sure datum to start from and then build the rest of the cartography. Always, except in the case of Bressani. In the Sanson map this Meridian is at 307°, passing through Quebec. Since his maps were built according to the 1634 resolution, we can conclude that for Sanson Quebec was 53° away from El Hierro. Another excellent measurement, being in fact this distance equal to 53°09'29". The placement of Sainte-Marie was not as good, at c. 296°, then c. 64° from El Hierro [i.e. 61°47'26"]. At this point we should be able to assume that we can find the Central Meridian of the Bressani map passing through one of these two locations. But no. In his cartography the Central Meridian is precisely at 307°, and since it passes through places where observation had never been made, the only plausible explanation is that Bressani tries here to use the same longitudinal map scan of Sanson, in an attempt to show him which was the correct positioning of the places in it and, at a first glance, where Quebec *actually* was. In this regard, the second reference to the position of the city - as well as the second possible datum chosen as "answer" to the Sanson map - is the illustration inscribed inside the double compass rose, which represents the declination

63 *Loc. cit.* n. 51.
64 BRESSANI 1653, p. 28 (*JR* XXXIX, pp. 40-41).

Figure 10: Nicolas Sanson, *Le Canada, ou Nouvelle France* (1656).

of the magnetic needle as observed in Quebec, equal to c. 16°W (cf. addendum). The problem of such a reasoning - if the reasoning made by Bressani was indeed this, as we believe - is only one, however mastodonic. The two maps are not built with a common Prime Meridian, which in itself would not even be a serious allegation, considering that Cabo de Orchilla is just 2°37'W of Santa Cruz. The real drama lies in the fact that, even if the calculations used by Sanson for his map certainly came from data collected by the Jesuits in New France and astronomical observations made in Europe, these would never have been able to fit in any way with those of Riccioli used by Bressani, since for the latter Paris was at exactly 25°E of La Palma, whereas for Sanson the capital was only 20°E of El Hierro, being this last one actually more distant from Paris than La Palma.

Fortune and dissemination of the *Accurata delineatio*

The real mystery, however, is to understand if Sanson ever received a copy of the map and if so, what was his opinion about it. But this is a problem related to its circulation, assuming that it had actually circulated and unfortunately, this seems to be a doubt with which we will have to learn living. The reason is perfectly embodied by the specimen of the map preserved in Modena. Its addendum that, in itself, is not an integral part of the map but a simple addition, seems to suggest that this specimen is not just a gift, but an actual presentation copy, printed in the precise attempt to coax a specific dedicatee who financed the entire edition; an enterprise in which Bressani probably did not succeed. This hypothesis is motivated by at least two reasons. First: if the Jesuit Father had succeeded in convincing the dedicatee, certainly other specimens bearing the addendum would be preserved, while the are only three more known, none of which bears the addendum[65]. Second: if a patron was not necessary, Bressani would have avoided to deprive the map of those reading keys contained only in the addendum, the lack of which make it unintelligible in some respects. Obviously Bressani must have realized too late that his finances were too small for such a publishing venture, otherwise he would have found a way to complete the map with an appropriate legend. Finally, probably not being particularly informed about the situation and the political affiliation of noble Bolognese families, he ended up looking for a sponsor in the worst possible place. The dedicatee of the specimen is Count Vincenzo Marescotti (d. a. 1683), a patrician citizen who, for seven times between 1638 and 1657, served as Consul (but never as Gonfaloniere of Justice, a fact to which Bressani refers in the addendum when says *whom Fortune has wronged by not giving the Monarchy*)[66]. The Count could have hardly been interested in financing the publication of a work that, besides Bressani's purposes, in the short term exalted France as a superpower, just nine years after the end of the Thirty Years War. Moreover, we have to take into account that Marescotti seems to have been a sympathizer of the Habsburgs, since, although the information about his life are practically nil, he published in 1666 - and probably at his own expense - an ode on the occasion of the wedding between the Emperor Leopold I (1640 - 1705) and his first wife, Margaret Theresa of Austria (1651 - 1673)[67]. No one knows who advised Bressani to turn to Vincenzo Marescotti, assuming it was not his idea. He had been absent from Italy for over fifteen years, but he may have known in France, and to be precise in Paris, members of the French branch of the family, the Marescot, many of whom held prestigious positions as court officials[68].

After the probable refusal of the Bolognese Count, Bressani plausibly printed some copies (without addendum) of his map out of his own pocket, in order to send them to those he could consider more interested; colleagues who would have understood the purposes inherent in the map, as the Superior General of the order, Goswin Nickel (1582 - 1664), the professors of the *Collegio Romano*, and perhaps even Sanson himself. The mystery deepens further, since in the early 1990s, the existence of a second state of the west sheet of the map has been discovered[69]. In it we find the signature of the engraver, Giovanni Federico Pesca, of which we know nothing, except that he was of Neapolitan origin and worked primarily in the whereabouts of Rome during the second half of the XVII century. We can also observe an iconographic addition (a small "copy" of the Amerindian couple in a canoe, rowing in Lake Huron) and the completion of the numbering of the double-scale of distances. To this day, no second state of the east sheet is known.

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65 Preserved at Bibliothèque nationale de France, Paris, and Österreichische Nationalbibliothek, Vienna. A third specimen, held at the National Archives of Canada is reconstituted (the west sheet has been acquired in 1960, the east sheet in 2002).

66 PASQUALI ALIDOSI 1670 pp. 186-205 (*passim*).

67 *Alla Potentissima Sacra Maestà di Leopoldo Ignatio d'Austria Imperatore Sempre Pio, sempre Felice, sempre Augusto, inuito à gl'incontri della Reale Augusta sua Sposa Margherita d'Austria Infanta delle Spagne, Ode del Conte Vincenzo Mariscotti di Bologna.* (In Bologna, presso Gio. Battista Ferroni, 1666).

68 We refer to the *Parisian* branch of the family, vd. BOREL D'HAUTERIVE 1859, pp. 189-194.

69 DAHL 1993

In conclusion, many doubts remain. How did we get to a second state if the map had a limited circulation? Did Bressani find another sponsor? If so, why did not he modify the map by adding the legend preserved in the addendum of the Modena specimen? For now these questions have no answer, but nevertheless the *Novae Franciae Accurata Delineatio* remains a cartographic document of rare beauty and one of a kind, which preserves the most correct and detailed geographic depiction of the Canadian territories published in those years.

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