# Hieronymus Bosch's stamps: realistic, satyrical, grotesque and otorhinolaryngological!

Albert Mudry, MD, PhD

#### **Abstract**

2016 saw the 500th anniversary of the death of the early Dutch painter Hieronymus Bosch (c.1450/6-1516), a largely discussed and somewhat original, innovative, visionary, fantastic, satirical, moral, grotesque and unique artist. This jubilee notably generated the production of various stamps and books to remember him, his workshop and followers considered together, and to open new interpretations, speculations, and discussions around them. The aim of this research is to study in detail all these paintings and to try to find out what is visually related to otorhinolaryngology using as a primary support documents of the different published stamps related to Bosch. A meticulous observation of all the faces found in his paintings was conducted and correlated to the produced stamps found on the market. All of Bosch's essential paintings were effectively reproduced on stamps in different countries and at different times. Nearly all possible forms of nose were found, from normal, to deformed, pathological, satirical and finally to grotesque ones. Alongside the famous symbolic double ears with a knife, the ears are usually nicely depicted, with some rare exceptions showing deformations. Except one example of tooth puller, no specific anomalies of the neck were observed, but only some voluntary traumatic lesions. Bosch also illustrated the three otorhinolaryngological senses, hearing, olfaction, and taste. The main outcome was that Bosch seems to have been an excellent observer, close to reality, with a certain knowledge of anatomy demonstrated by meticulous reproduction of some medical anomalies.

In 2016 was celebrated the 500 year anniversary of the death of the early Dutch painter Hieronymus Bosch (c.1450/6-1516) (**Figure 1**), a largely discussed and somewhat original, innovator, visionary, fantastic, satirical, moral, grotesque and unique artist. This jubilee notably generated the production of various stamps, official and cinderellas, and books to remember him, his workshop and followers considered together, and to open new interpretations, speculations, and discussions around them.

Son of the painter Anthonis van Aken (c.1420-1478), Jheronymus van Aken, later known under the name of Hieronymus Bosch, was born in Hertogenbosch, The Netherlands, between 1450 and 1456, in an orthodox catholic family. Most of the members of his family were also painters and worked in the painting studio van Aken in Hertogenbosch. Very few details exist about

A.Mudry
Department of Otolaryngology, Head and Neck Surgery,

Stanford University School of Medicine, 801 Welch Road, Stanford, CA 94305-5739, USA

e-mail: amudry@stanford.edu



Figure 1: Bosch portrait, Netherlands stamp 2016



Figure 2: Bosch 2016 catalogue raisonné + technical studies

his childhood and adolescence. In 1480/1, he married the daughter of a rich family of tradesmen allowing him to easily organize his future life as a freelance painter. His main artistic production was from the end of the 1480's until his death in 1516. Whilst he was working in his workshop, he had some colleagues, in a kind of circle, certainly also working for him, some of them becoming his first followers. This situation explains why some paintings were attributed to Bosch himself, which are usually signed, some to his circle and some to his followers, which are not signed. All Bosch's paintings were documented in detail by the interdisciplinary Bosch Research and Conservation project between 2007 and 2016  $^{(1-2)}$  (**Figure 2**). It has become the actual reference on Bosch's paintings. It collected 37 works, 21 attributed to Bosch himself: 'Saint Jerome at prayer' (Ghent), 'Hermit saint triptych' (Venice), 'The temptation of Saint Antony (fragment)' (Kansas City), 'The temptation of Saint Anthony' (Lisbon), 'Saint John the Baptist' (Madrid), 'Saint John on Patmos / passion scenes' (Berlin), 'Saint Christopher' (Rotterdam), 'Saint Wilgefortis triptych' (Venice), 'The adoration of the Magi' (Madrid), 'The adoration of the Magi' (New York), 'Ecce homo' (Frankfurt am Main), 'Christ carrying the cross / Christ child' (Vienna), 'Christ carrying the cross' (El Escorial), 'The crowning with thorns' (London), 'Calvary with donor' (Brussels), 'The last judgement' (Bruges), 'The last judgement' (Vienna), 'Visions of the hereafter' (Venice), 'Wayfarer triptych' (4 Rotterdam, parts, New Haven Paris, and Washington), 'The Haywain (Madrid), and 'The garden of earthly delights' (Madrid). Four to his worshop: 'The flood' (Rotterdam), 'Job triptych' (Bruges), 'Ecce homo triptych' (Boston) and 'The adoration of the Magi' (Philadelphia). Ten to his followers: 'Fragments of an adoration of the Magi triptych' (Philadelphia

'The crowning with private collection), thorns' (El Escorial), 'The passion triptych' (Valencia), 'Christ carrying the cross' (Ghent), 'The last judgement (frament)' (Munich), 'The temptation of Saint Anthony (fragment)' (Madrid), 'The conjurer' (Saint-Germain-en-Laye), 'The Haywain' (El Escorial), 'Ecce homo' (Amsterdam), and 'The temptation of Saint Anthony' (Hertogenbosch). Two to workshop or followers: 'The cure of folly' (Madrid), and 'The seven deadly sins and the four last things' (Madrid). This listing does not include some other paintings usually attributed to Bosch's followers such as 'The vision of Tundale' (Denver), 'The vision of Tundale' (Madrid / Fundacion Lazaro Galdiano), 'Christ before Pilate' (Hertogenbosch), 'Christ before Pilate' (Princeton), 'Concert in the egg' (Lille) (formerly considered to be a copy of a lost work by Bosch, and currently considered to be based on one of Bosch's drawings), 'The marriage feast at Cana' (Rotterdam), 'The arrest of Christ' (San Diego), 'The arrest of Christ' (Hertogenbosch), 'Ecce homo' (Indianapolis), 'The adoration of the Magi' (Aix-la-Chapelle), and 'Saint James and the magician Hermogenes' (Valenciennes) (3-6). Detailed analysis and consideration of arguments lead to the decision as to whether a work should be viewed as a Bosch himself, Bosch and workshop, worshop of, or follower of. Referring to workshop means that the work is closely related to Bosch, but there is no concrete evidence to support a direct link with Bosch himself. Fol-



Figure 3: Ear, nose and throat drawings from 'The garden of earthly delights' (Madrid)

lower is applied to works with numerous Boschian elements, but for which there are no grounds for placing the work in Bosch's workshop in Hertogenbosch <sup>(2)</sup>. Original works seem to be easily distinguished from the less energetic and wan-colored copies made by his contemporary imitators <sup>(7)</sup>. For concision, they are studied together because classically, they are simply attributed to Bosch.

The aim of this research is to study in detail all of these paintings and to try to find out what is visually related to otorhinolaryngology using as first support documents the different published stamps related to Bosch. A meticulous observation of all the faces found in his paintings was conducted and correlated to the produced stamps found on the market. All of Bosch's essential paintings are effectively reproduced on stamps in different countries and times with some exceptions, notably 'Christ carrying the cross' (Vienna) and 'The passion triptych' (Valencia), which are interesting for otorhinolaryngology subjects. Ear, nose, throat, and other related structures main anomalies (not all) are presented and illustrated in this research. Limitations are related to the fact that it is nearly impossible to be sure that all published stamps were found, notably the cinderella ones. Bias can be associated with the otorhinolaryngological personal interpretation (normal – abnormal – pathological) of the observations made.

Bosch lived in an evolved and culturally open society, known as the early modern period marked by the fall of Constantinople in 1453, the invention of printing in 1455, allowing a rapid diffusion of knowledge, the discovery of America in 1492. It was the beginning of The Renaissance with all its artistic revolution. In the Flemish school of art, most of the painting subjects are religious until the beginning of the 15th century. They are mainly extracted from the

Bible or related to the life of various Saints. A great master is usually associated with a codified technique of proportion in painting. Then and progressively scenes of every-daylife appear, notably with peasants and beggars, historical sceneries are represented, and naturalism finds its place. Canon of body and face beauty play an important role, and lead in some circumstances to antithesis ideas and the introduction of ugliness and the grotesque. A beautiful face is simply associated with good and an ugly one with bad temper. Furthermore, in the representation of numerous faces, the painter tries to completely diversify all the characters, leading to contrasting images. Different artists also began to introduce more realistic illustrations with the representation of physical deformations and malformations, traumatic lesions and their sequelae, excrescences and tumors, dermatologic diseases and lesions notably related to epidemic diseases such as bubonic plague, leprosy, scurvy, ergotism, scrofula, smallpox, or syphilis. Bosch definitively belongs to this category of artists. He was an excellent observer, close to reality (Figure 3), with a certain knowledge of anatomy, making him capable to reproduce meticulous illustrations of sequelae of disease (8) such as for crippling disorders which were not a neural form of leprosy, but rather congenital malformations, dry gangrene due to ergotism (9), post-traumatic amputations, cranio-facial, ophthalmological and orthopedic anomalies, epidemic diseases and even simulators (10). He also introduced unrealistic, fantastic, satirical and demoniac subjects creating a kind of mix often difficult to understand.

Various authors tried to explain why Bosch painted such compound subjects. For Jowell, it is not so simple to explain. He wrote that "It is hard to believe that the mysterious workings of Bosch's imagination have been explained." (11) Fromm explains that "This combination of real and surreal tends to give the viewer the disquieting feeling that Bosch's non-reality is reality. It evokes a sense of reality and counter-reality, and of dynamic, intense emotion." (12) Hemphill adds that "His fantasies are credible because of the artist's accurate observation, and by using common dream mechanisms he portrayed convincingly a world inhabited by creatures who embody persistent collective fears. They convey strongly the impression that Bosch actually witnessed the terrible scenes he painted, and believed implicitly in their message." (13) For Kroy, "the figures were intenings (16) or as a print for individuals (17-18) in the same way as finger prints. To depict ears, Bosch regularly uses the impasto technique (thick laying of painting giving more relief) such as for the ear of 'Saint Jerome at prayer' (Ghent) (**Figure 4**), the ears in 'Hermit Saints triptych' (Venice), or the ear of 'Death and the mister – Wayfarer triptych' (Washington). Usually most of Bosch's ears have an oval form and are classical, with some rare exceptions such as a round ear in the 'Vision of the hereafter' (Venice) (**Figure 5**), or satyr ears in 'The flood – After the last jugement' (Rotterdam) (**Figure 6**).

The left panel ('The hell of music') of 'The garden of earthly delights' (Madrid) (**Figure 7-8**) presents the most well-known ear depiction by Bosch, a pair of human ears pierced by an arrow and brandishing a blade (**Figure 9**).



Figure 4: Impasto technique for the ear, from 'Saint Jerome at prayer' (Ghent), Liberia cinderella stamp 2017

tionally built into the drawing, either to enhance its intrigue or to tell a story, or both." (14) Some try to place it on a psychiatric level without a clear answer. Bosch seems to be "troubled by the frightening chimeras and demons of his inner mind." (15) This question will certainly remain open for eternity. Nevertheless, Bosch's paintings are real and observable by everybody.

## Ear depictions

The ear is a highly characteristic and individual part of the face. It has been used as a mark to recognize the origin of some paintIn addition, a little devil pushes a needle into the roots of the helix of one of the ears. It is the only auricle painted by Bosch found with a rectangular form. Interpretation of it opens many speculations as Bosch does not give details. Is it an allegorical medieval symbolism? Tortures one might expect in the hell? Symbolism of man's deafness to the New Testament exhortation: "If any man have ears to listen, let him hear"? Phallic connotation, castration act? Or even a weapon of war? The two ears leading one to think of wheels, and the blade of a knife to the barrel of a cannon?



Figure~5: Round~form~of~the~auricle, from~`Vision~of~the~hereafter'~(Venice)



 $Figure\ 6:\ Satyrs\ ears,\ from\ ``The\ flood-After\ the\ last\ judgment'\ (Rotterdam)$ 



Figure~7:~'The~garden~of~earthly~delights'~(Madrid),~Gambia~bloc~2016



Figure~8:~'The~garden~of~earthly~delights'~(Madrid),~Central~African~Republic~stamp~2013,~Antigua~stamp,~1980



Figure 9: Ear detail of 'The garden of earthly delights' (Madrid), Angola stamp 2000, Gambia stamp 2016, Solomon Islands stamp 2016, Netherlands stamp 2016

On the inside right panel of 'The temptation of Saint Anthony' (Lisbon) (**Figure 10**) is demonstrated a protruding ear (**Figure 11**) in a detail where Saint Anthony is helped across the bridge by his friends, and a plicated ear, like a cup ear (**Figure 12**), in the figure of the man in the background under the bridge. This man is dressed like a Church high dignitary with his head covered by a cap. Another protruding ear is found in 'Christ before Pilate' (Hertogenbosch) (**Figure 13**), as is another cup ear in 'Christ before Pilate' (Princeton) (**Figure 14**).

In 'The cure of folly' (Madrid) where the surgeon practices an extraction of the stone, the blood runs on the face of the patient and seems to stop in the conch of the ear (**Figure 15**), conducting to a kind of coagulum at the entrance of the external auditory canal. In the central panel of 'The temptation of Saint Anthony' (Lisbon), an unclear traumatic lesion of the auricle is visible (**Figure 16**).

A nearly total absence of relief of the auricle is visible on the head of a woman, also with a saddle nose, in 'Christ carrying the cross /



Figure 10: 'The temptation of Saint Anthony' (Lisbon), Portugal bloc 2016, St. Vincent & The Grenadines bloc 2016



Figure 11: Protruding ear from 'The temptation of Saint Anthony' (Lisbon), St. Vincent & The Grenadines stamp 2016



Figure 12: Plicated ear, from 'The temptation of Saint Anthony' (Lisbon), Netherlands stamp 2016

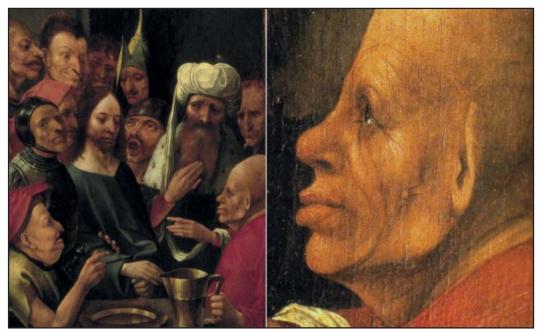


Figure 13: Protruding ear, from 'Christ before Pilate' (Hertogenbosch)



Figure 14: Plicated ear, from 'Christ before Pilate' (Princeton)

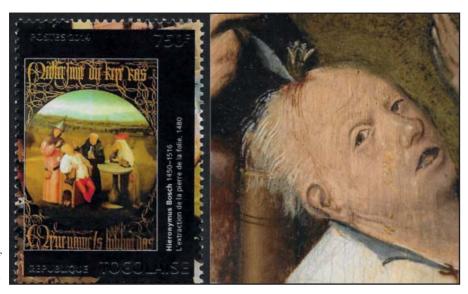


Figure 15: Blood collected into the conch of the ear, from 'The cure of folly' (Madrid), Togo stamp 2014

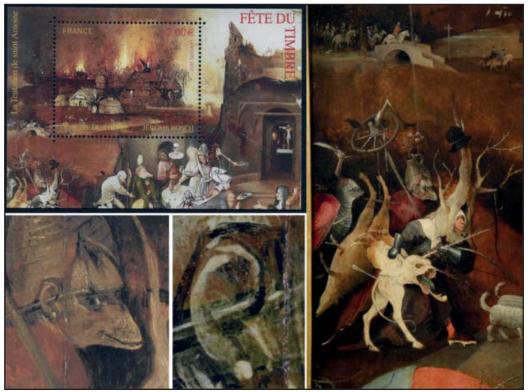


Figure 16: Auricle wound, detail from 'The temptation of Saint Anthony' (Lisbon), France bloc 2012



Figure 17: Microtia, from 'Christ carrying the cross / Christ child' (Vienna)

Christ child' (Vienna) (**Figure 17**). It looks like a severe microtia with a remnant of lobule. The comparison with the normal ear of the neighbouring person, with a hooked nose, is demonstrative and lets suppose that this absence was voluntarily painted. Nevertheless, in some photographic copies, the absence of the auricle is less evident!

Earrings are sometimes depicted. In 'The adoration of the Magi' (Madrid), the black king holding an incense-holder, in the central

panel wears an earring (**Figure 18**), as does the black child behind him. It was customary around the mid-15th century to depict one of the three kings, usually the youngest, as a black man. In 'The adoration of the Magi' (Aix-la-Chapelle), the black king is half-caste, compared with the black child behind him! 'The adoration of the Magi' (New York), also shows an earring worn by the black king holding a spherical ciborium, who presents a completely different face. This striking profile, head and curly hair is also found in the



Figure 18: Earring, from 'The adoration of Magi' (Madrid), Congo stamp 1985, Liberia stamp 1970, Cook Islands stamp 1967



Figure 19: Earrings, from 'The adoration of Magi' (Philadelphia), Ghana stamp 1991, Gambia bloc 2016



Figure 20: Earring, from 'Ecce homo' (Frankfurt am Main), Grenada stamp 2016



Figure 21: Earring, from 'The haywain' (Madrid), Central African Republic 2013



Figure 22: Earring and plicated ear, from 'Christ carrying the cross' (Ghent)



Figure 23: Bilateral earrings, from 'The passion tryptich' (Valencia)



Figure 24: Woman earring, from 'The marriage feast at Cana' (Rotterdam)



Figure 25: Ear details, from 'The wood has ears, the field has eyes' (Berlin)

face of the black king in 'The adoration of the Magi' (Philadelphia) (**Figure 19**), but slightly less profiled and with a different earring, and in two black youths in the central panel of the 'Garden of earthly delights' (Madrid), without earrings. 'Ecce homo' (Frankfurt am Main) demonstrates an earring on a person next to Christ (Figure 20), such as a man with a red headband following the Pope, Emperor, King and Duke riding behind the haycart in the central panel of 'The haywain' (Madrid) (Figure 21), or a man wearing an earring with a some-what ill-defined and plicated ear in 'Christ carrying the cross' (Ghent) (Figure 22), and a man accompanying the 'Christ before Pilate' (Hertogenbosch). 'The passion triptych' (Valencia) left panel depicts an annular earring with a string letting suppose a kind of bilateral earring joined together (**Figure 23**). On the right panel, another man wears an earring. On the contrary, only one woman is found with earring. It is in 'The marriage feast at Cana' (Rotterdam) (**Figure 24**).

Two human ears are depicted on either side of a hollow tree, with seven eyes in the front field in the drawing 'The wood has ears, the field has eyes' (Berlin) (**Figure 25**). It is considered as a figure of speech, a metaphor, or a proverb, translated into a literal visual image <sup>(11)</sup>. It probably illustrates the proverb campus habet oculos, silva aures, in other words, to be discret. Various images of falling persons are also found, but it is difficult to assimily them to vertigo.



Figure 26: 'Christ carrying the cross' (Ghent), Belgium stamp 1958, Mozambique stamp 2010



Figure 27: Various noses, from 'Christ carrying the cross' (Ghent)



Figure 28: Beginning rhinophyma, from 'Christ crowned with thorns' (London), Grenada stamp 2016, Grenadines stamp 1976, Congo stamp 2007, Solomon Islands stamps 2016 and 2017



Figure 29: Hairy nose, from 'The last judgment (fragment)' (Munich)



Figure 30: Vestibular nodule in the nose, from 'The arrest of Christ' (San Diego)

#### Nose depictions

The nose has a key place in the study of the harmony and proportions of the face. To pass from normality to abnormality is not always simple. The relationship between size and proportion of different facial measurements is considered to affect the perception of aesthetics (19). The most representative depictions of noses are found in the 'Christ carrying of the cross' (Ghent) (Figure 26). It presents eighteen hideous and insane-looking faces (in fact nineteen, one being replicated on a cloth), thirteen of which display abnormal features, notably a saddled nose, hooked nose, and the beginnings of rhinophyma (Figure 27). Other anomalies are progenia, large gaps between the few remaining teeth, exophtalmus and squint-eyes. Crouzon's disease is discussed (20). No such outrageous collection of villains appear in Bosch's collection. Nevertheless, more or less extravagant noses appear in 'Christ before Pilate' (Hertogenbosch), 'Christ before Pilate' (Princeton), 'Ecce homo' (Indianapolis), and 'The passion triptych' (Valencia).

'Christ crowned with thorns' (London) (**Figure 28**) demonstrates the beginnings of rhinophyma in the face of one of the tormentors, the older man lower left, with his otherwise sharply drawn features (clearly intended as a Jew <sup>(2)</sup>). Another old man middle right, also shows a partially hooked nose. 'The last judgement (fragment)' (Munich) shows a large hairy nose (**Figure 29**).

A nodule is found at the entrance of the vestibule in one face in 'The arrest of Christ' (San Diego) (**Figure 30**). This nodule is also found in one similar face on the left panel of 'The passion triptych' (Valencia). It could be related to a polyp extruding from the left nostril.

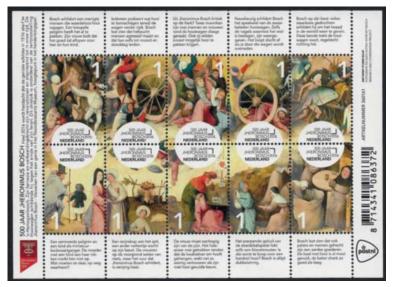
'The vision of Tundale' (Madrid / Fundacion Lazaro Galdiano) is rather strange with its representation of a running flower nose and a tree growing out of the ear. 'The vision of Tundale' (Denver) depicts a detailed nasal vestibule entrance with a broche (**Figure 31**).



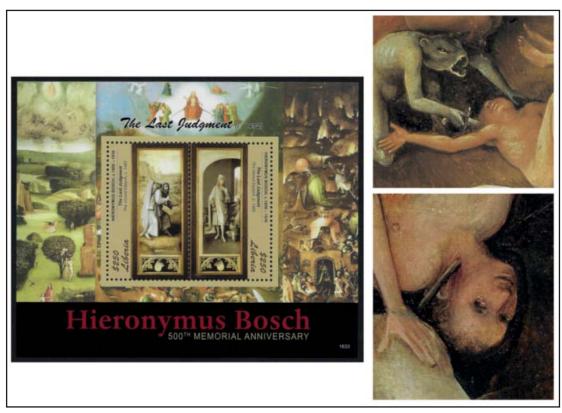
Figure~31:~'The~vision~of~Tundale'~(Madrid)~and~(Denver)



Figure~32:~Neck~trauma,~from~`The~haywain'~(Madrid),~Netherlands~stamp~2016,~Mozambique~stamp~2001



Figure~33:~Neck~trauma,~from~`The~haywain'~(Madrid),~Netherlands~bloc~2016



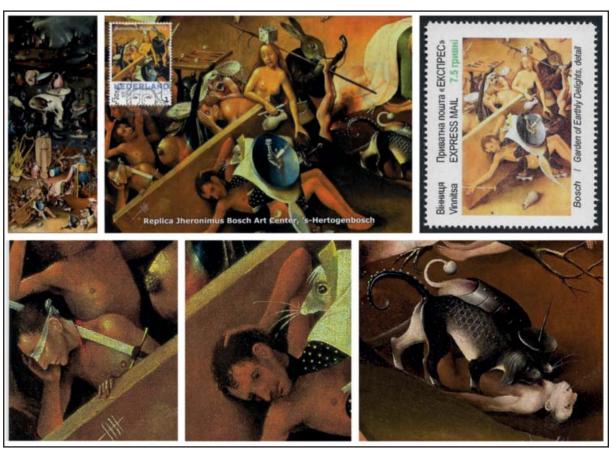
Figure~34:~Neck~trauma,~from~`The~last~judgment'~(Vienna),~Liberia~bloc~2016



Figure~35: Neck~trauma, from~`The~temptation~of~Saint~Anthony'~(Lisbon),~Togo~bloc~2014,~China~postcard~2017



Figure 36: Neck trauma, from 'Visions of the hereafter' (Venice)



Figure~37:~Neck~traumas~and~strangulation,~from~`The~garden~of~earthly~delights'~(Madrid),~Netherlands~stamp~2016,~Vinnits aciderella~stamp~2016

## **Neck lesions**

The neck area is a much less interesting artistic region because, it does not have as many characteristics as the ear of the nose. Few modifications are possible such as tumors (mainly goitre) and traumatic lesions but usually deliberate. Voluntary neck lesions with knife, swards and other sharp instru-

ments are quite common in Bosch paintings. The most illustrative one is found in 'The haywain' (Madrid) (**Figure 32-33**). Others are in the central panel of 'The last judgement' (Vienna) (**Figure 34**), in the left panel of 'The temptation of Saint Anthony' (Lisbon) (**Figure 35**), in 'Visions of the hereafter' (Venice) (**Figure 36**), and in the left panel of 'The garden of earthly delights' (Madrid)



Figure 38: Decapited man, from 'The last judgment' (Bruges)



Figure 39: Hearing, smell and taste from 'The garden of earthly delights' (Madrid), Congo bloc and stamp 2016

where a proper strangulation and a partial decapitation (**Figure 37**) are seen. A decapitated man is found in 'The last judgement' (Bruges) (**Figure 38**).

# Other related structures

In the lower part of the central panel of 'The garden of earthly delights' (Madrid), the senses are depicted, notably hearing, smell and taste (**Figure 39**).



Figure~40: Tooth~puller, from~`The~haywain'~(Madrid),~Netherlands~stamp~2016,~ORL~advertisement~1966



Figure 41: Tumor of the left jaw, from 'Saint James and the magician Hermogenes' (Valenciennes)



Figure 42: Patch on the temporal region, from 'Christ carrying the cross' (Ghent), Somalia cinderella stamp 2016



Figure~43: Patch~on~the~temporal~region, from~`Ecce~homo~tryptich'~(Boston)



Figure 44: Temporal wound, from 'The seven deadly sins and the four last things' (Madrid), Togo bloc and stamp 2014



Figure~45: Various~piercings, from~`Christ~before~Pilate'~(Hertogenbosch)



Figure 46: Facial asymetry, from 'Concert in an egg' (Lille), Solomon Islands stamp 2017, Mozambique 2001



Figure~47:~Ukraina~cinderella~bloc~2016



Figure 48: Liberia cinderella bloc 2017

A tooth puller is illustrated in 'The haywain' (Madrid) (**Figure 40**).

'Saint James and the magician Hermogenes' (Valenciennes) essentially demonstrates a tumor of the left jaw (**Figure 41**), the interpretation of which is not so simple. First is it bilateral? The right part of the lower face is covered by the gown. The facial plicae seem to be compressed and directed more verti-

cally. Secondly, in front of the chin, two unclear small ball-shaped tumors with reddish color are also visible. Are these observations on the chin related to the tumor in the parotid area? It is very difficult to give a precise diagnosis.

Patches covering a wound by several ailments, inclusive syphilis, on the temporal region are found in 'Christ carrying of the cross' (Ghent) (**Figure 42**), and in 'Ecce

homo triptych' (Boston) (**Figure 43**). In 'The seven deadly sins and the four last things' (Madrid), a temporal wound is depicted (**Figure 44**).

Piercing is also sometimes depicted, notably in 'Christ carrying the cross' (Ghent), piercing of the jaws, in 'Christ before Pilate' (Princeton), piercing of the nose, the lips and the jaws (**Figure 45**), such as 'Christ before Pilate' (Hertogenbosch).

One of the people depicted in the 'Concert in the egg' (Lille) demonstrates diverging eyes, the right eye to the left and the left eye upwards, an asymmetric opening of the mouth but with conservation, on both sides, of nasolabial folds, the right being more pronounced than left, lacking teeth, and blood strings right temporal region under the headwear (**Figure 46**). It is difficult to associate these anomalies with a specific pathology. It does not look like a true facial palsy. Could it be a residual of recovering from a facial apoplexy?

#### Conclusion

The main outcome was that Bosch seems to have been an excellent observer, close to reality, with a certain knowledge of anatomy demonstrated by meticulous reproduction of some medical anomalies. On the other hand, Bosch was a visionary with great imagination. An attempt at a full interpretation of the details of Bosch's paintings is impossible and irrelevant. But close examination of these details is very interesting and gives some insights of the main visual otorhinolaryngological anomalies encountered during his time. Stamps were a good support for this study (**Figure 47-48**).

#### **Bibliography**

- Hoogstede L, Spronk R, Erdmann RG, et al. Technical studies Hieronymus Bosch painter and draughtsman. New Haven & London: Yale University Press, 2016.
- Ilsink M, Koldeweij J, Spronk R, et al. Catalogue raisonné Hieronymous Bosch painter and draughtsman. New Haven & London: Yale University Press, 2016.

- 3. Marijnissen RH, Ruyffelaere P. Bosch. Paris: Albin Michel (Mercator), 1999.
- 4. Koldeweij J, Vandenbroeck P, Vermet B. *Jérôme Bosch l'œuvre complet*. Amsterdam: Ludion, 2001.
- Fischer S. Jheronimus Bosch l'œuvre complet. Köln: Taschen, 2016.
- 6. Borchert TH. Bosch par le détail. Paris: Hazan, 2016.
- 7. Saleman M. The cure of folly or the operation for the stony by Hieronymus Bosch (c.1450-1516). Neurosurgery 2006;59(4):935-937.
- Rutecki GW. Bosch and Bruegel disability in sixteenthcentury art. The Pharos 2016; Winter: 45-54.
- Vander Kooi C. Hieronymus Bosch and ergotism. WMJ 2012;111(1):4.
- Dequeker J, Fabry G, Vanopdenbosch L. Hieronymus Bosch (1450-1516): Paleopathology of the medieval disabled and its relation to the bone and joint decade 2000-2010. *IMAJ* 2001;3(11):864-871.
- 11. Jowell F. The paintings of Hieronymus Bosch. *Proc Roy Soc Med* 1965;58:131-136.
- Fromm E. The manifest and the latent content of two paintings by Hieronymus Bosch: A contribution to the study of creativity. Am Imago 1969;26(2):145-166
- Hemphill RE. The personality and problem of Hieronymus Bosch. Proc Roy Soc Med 1965;58:137-144
- Kroy W, Langerholc J. Ambiguous figures by Bosch. Perception & Psychophysics 1984;35(4):402-404.
- 15. Lucas AR. The imagery of Hieronymus Bosch. Am J Psychiat 1968;124(11):1515-1525.
- Lermolieff I (Morelli G.). Kunstkritische Studien über italienische Malerei. 3 vols. Leipzig: Brockaus, 1890-1893
- 17. Iannarelli A. *The Iannarelli system for ear identifiation*. Brooklyn: Foundation Press, 1964.
- 18. Iannarelli A. *Ear identification 156*. Privately published by the author, 1989.
- Kasim M, Jayanth C, Karthigeyan J, et al. Identifying position, visibility, dimensions, and angulation of the ear. *JRRD* 2014;51(4):599-608.
- Tschassovnikarov D, Markov G. Personologische Untersuchungen über einige Urbilder im Schaffen von Hieronymus Bosch. Psychiat Neurol Med Psychol Leipzig 1980;32:623-630.