



2. Hizkuntza burmuinean

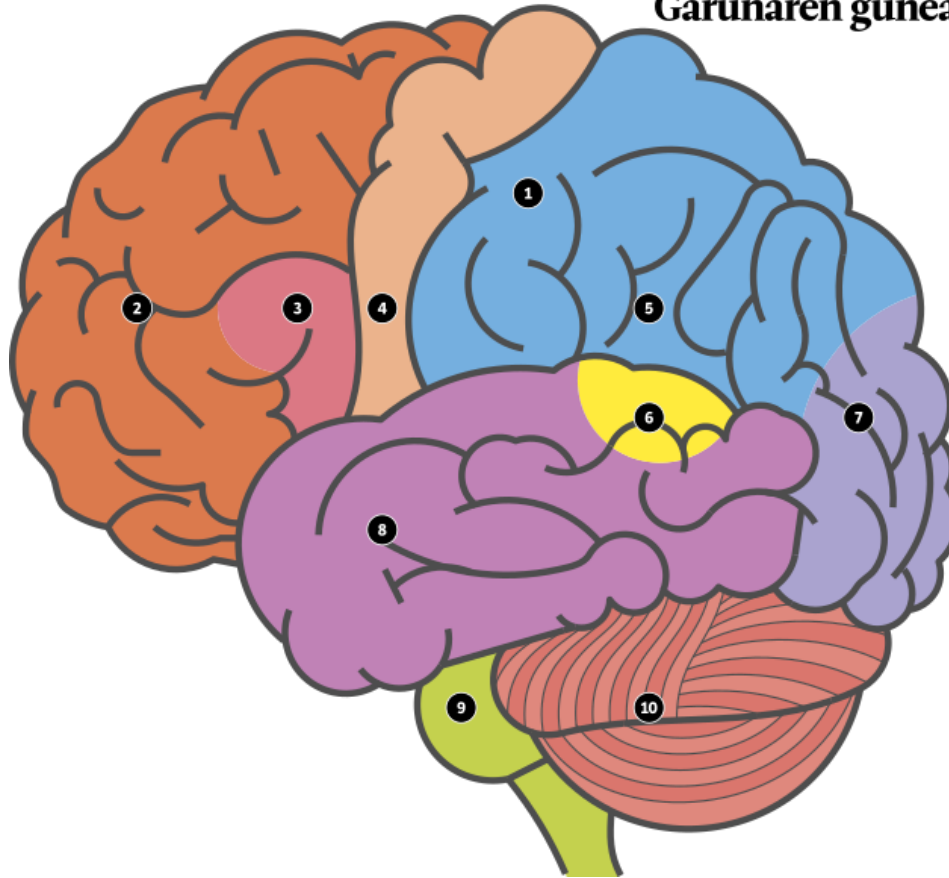
a. Hizkuntzaren neuroanatomia

Neuroanatomia

- Burmuinak 1,4 kilogramo pisatzen ditu, giza gorputzaren %1,5a.
- Hala ere, giza gorputzak gastatzen duen energiaren %20a gastatzen du.
- 22.000 milioi inguru neurona ditugu.

Garuna

Garunaren guneak eta funtzioak

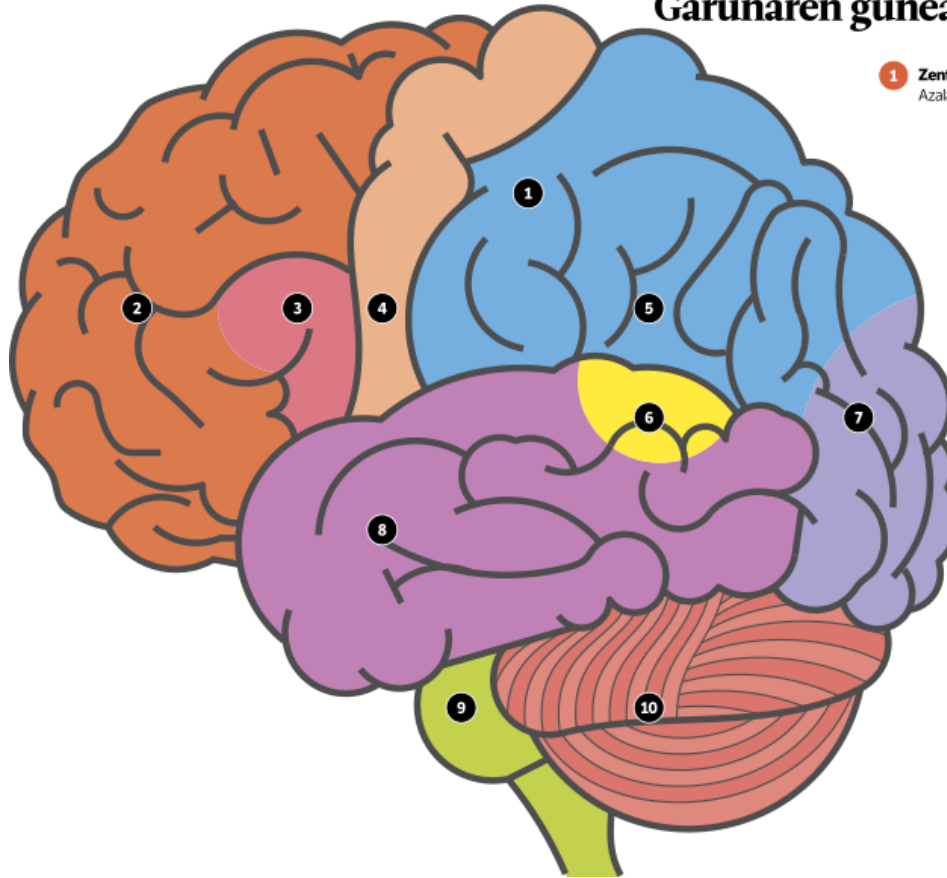


Lobuluak: 2, 5, 7, 8

Garuna

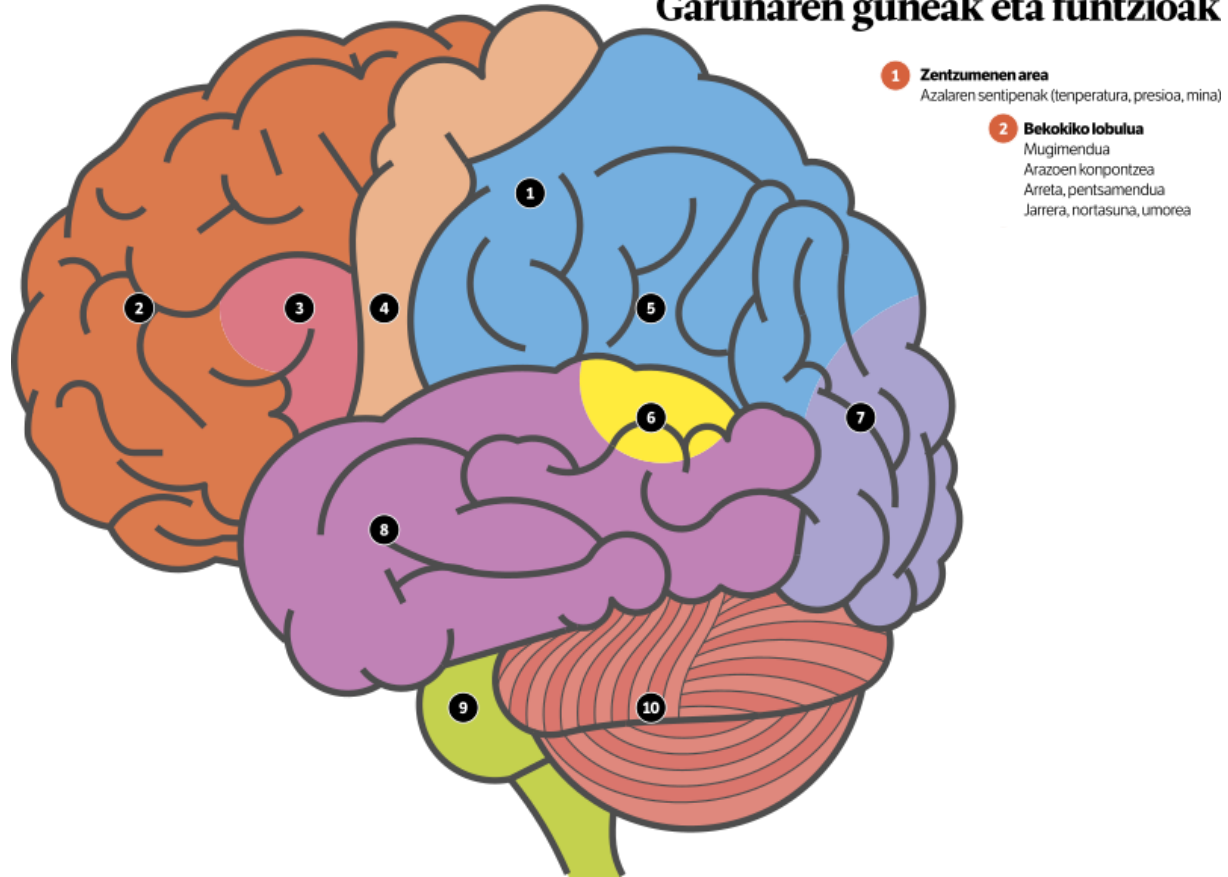
Garunaren guneak eta funtzioak

- 1 Zentzumeneren area
Azalaren sentipenak (tenperatura, presioa, mina)



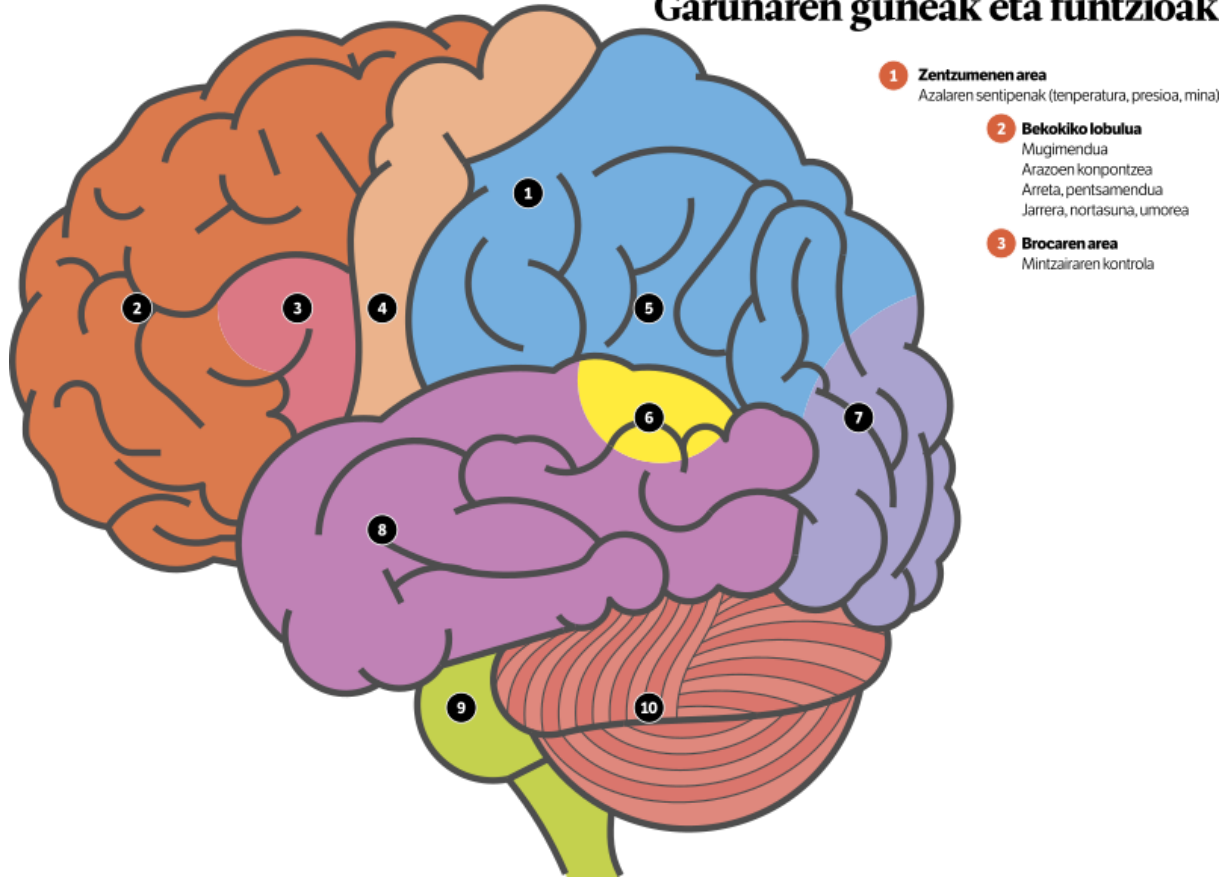
Garuna

Garunaren guneak eta funtzioak



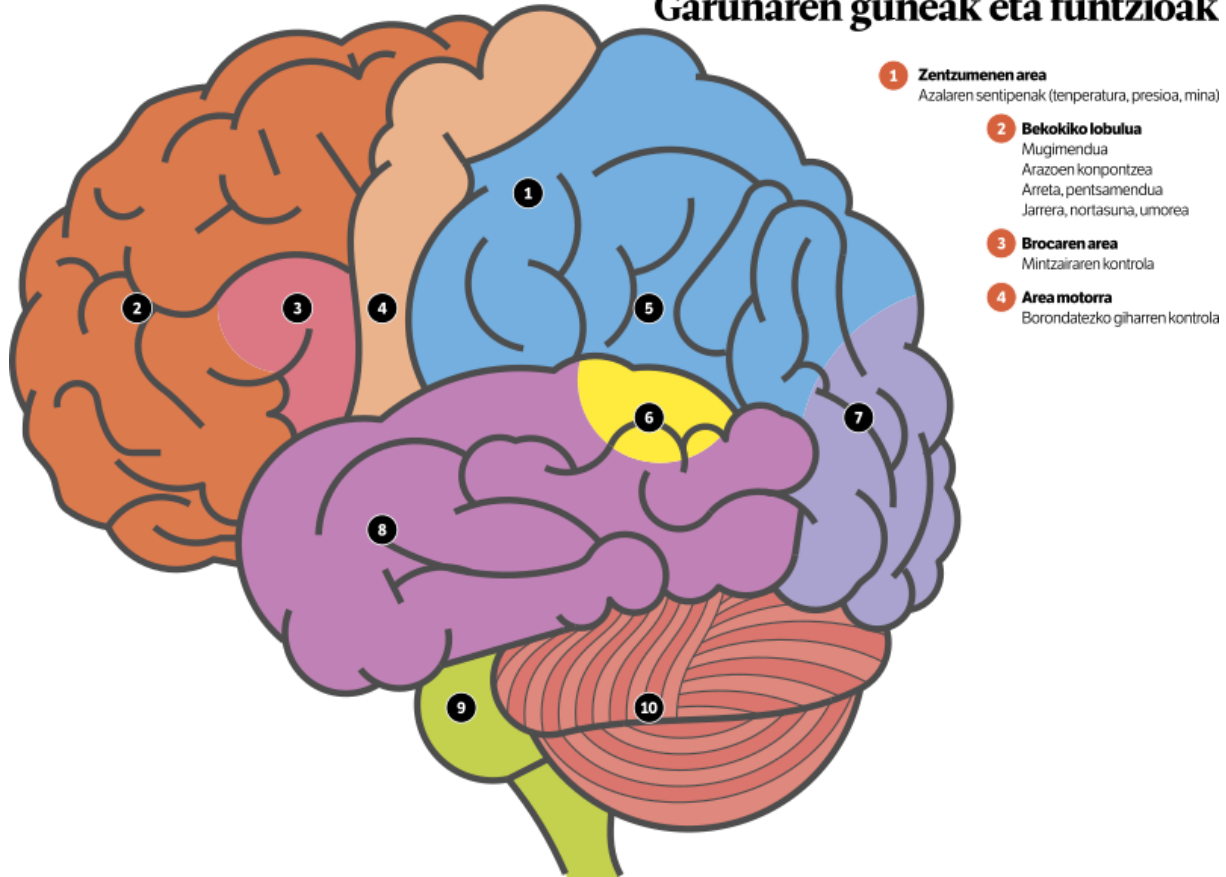
Garuna

Garunaren guneak eta funtzioak



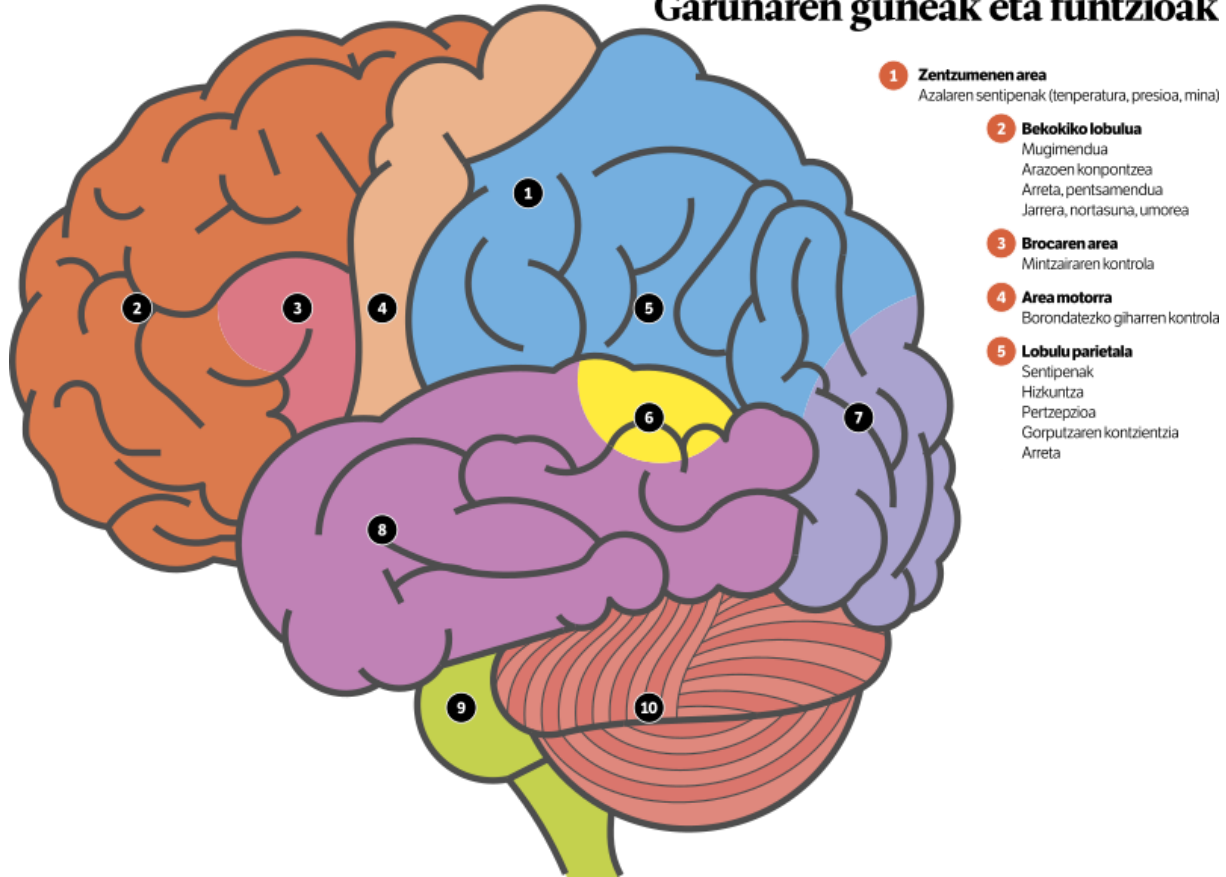
Garuna

Garunaren guneak eta funtzioak



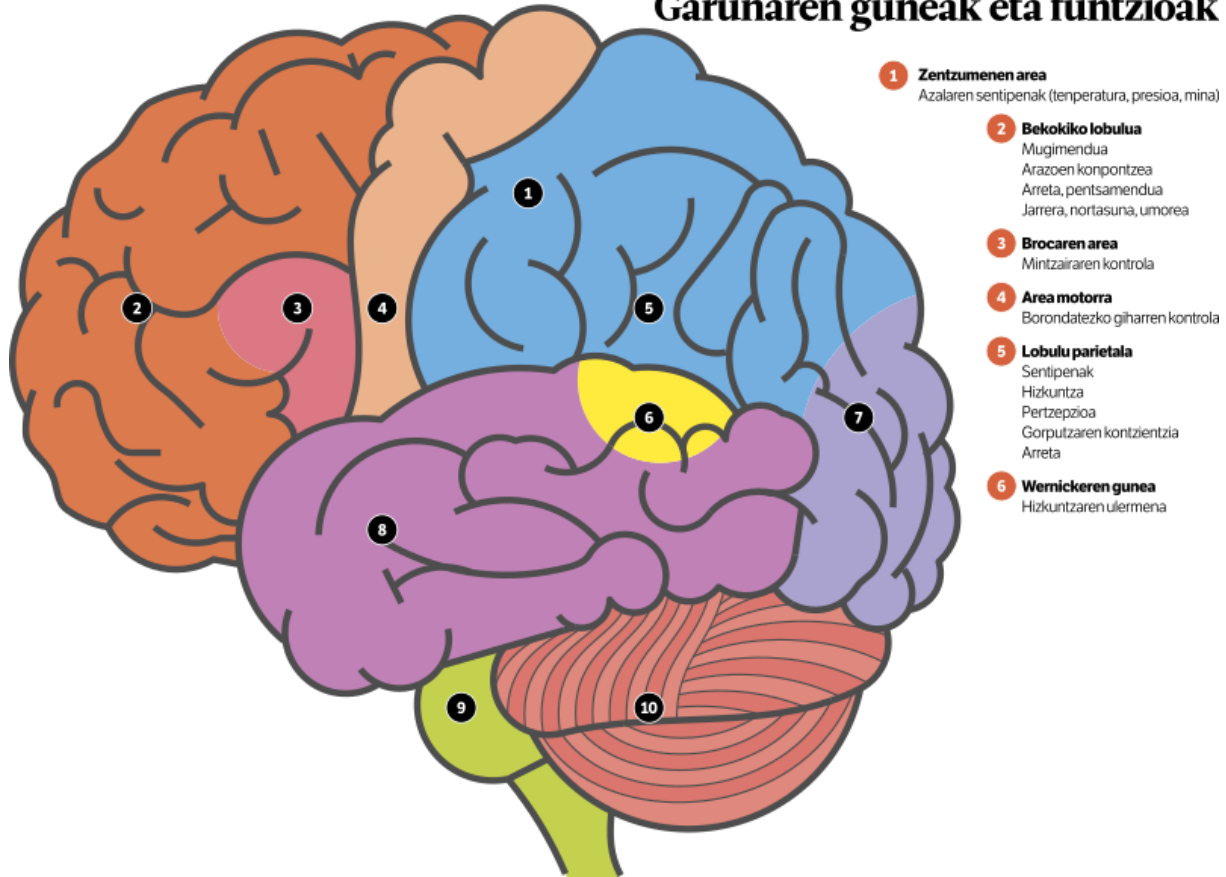
Garuna

Garunaren guneak eta funtzioak



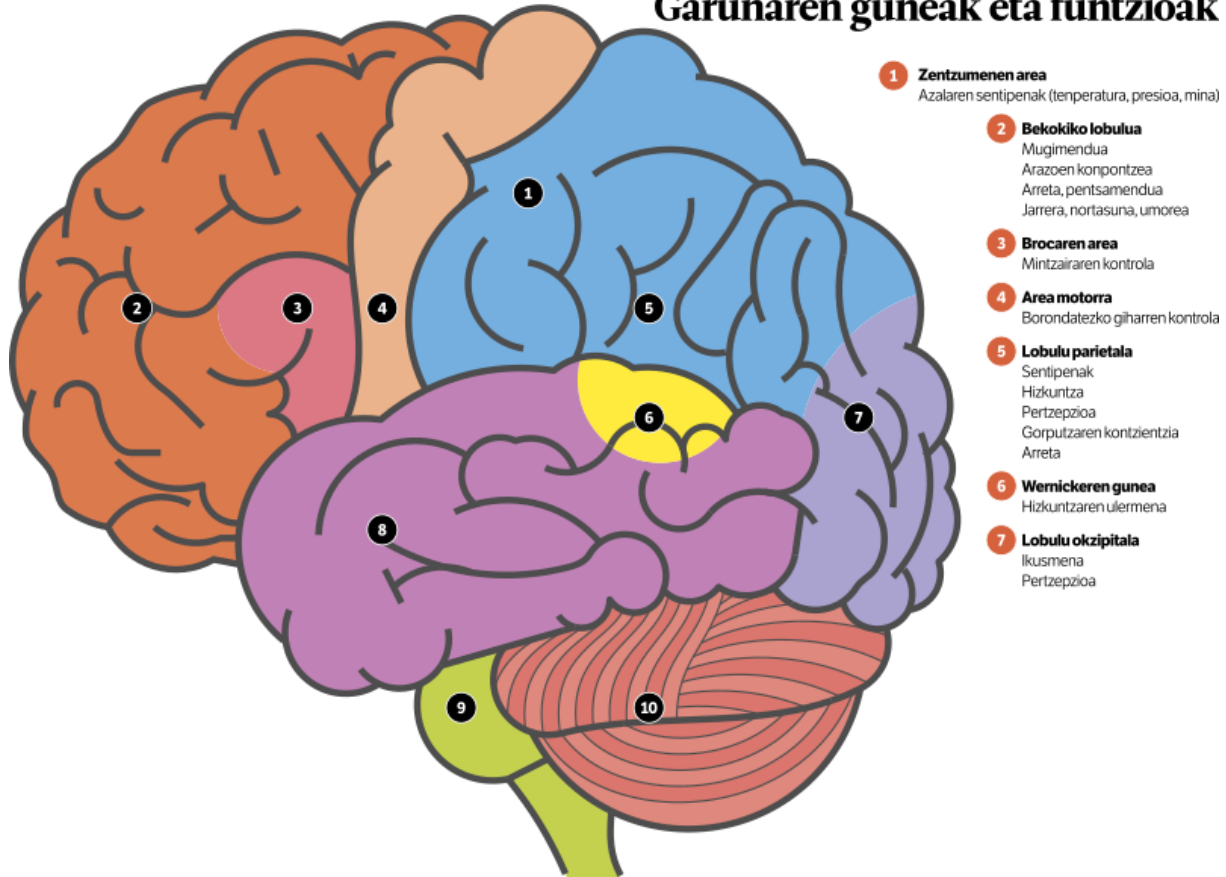
Garuna

Garunaren guneak eta funtzioak



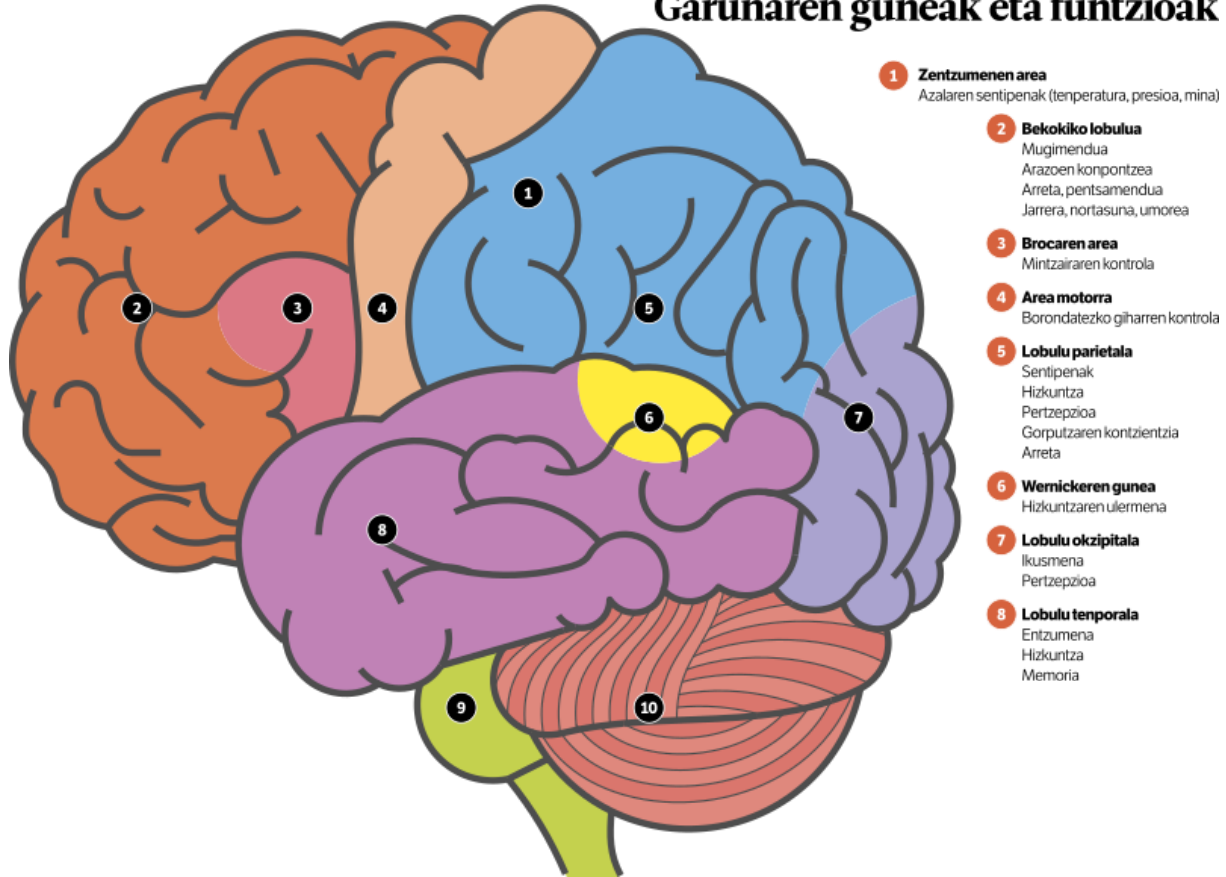
Garuna

Garunaren guneak eta funtzioak



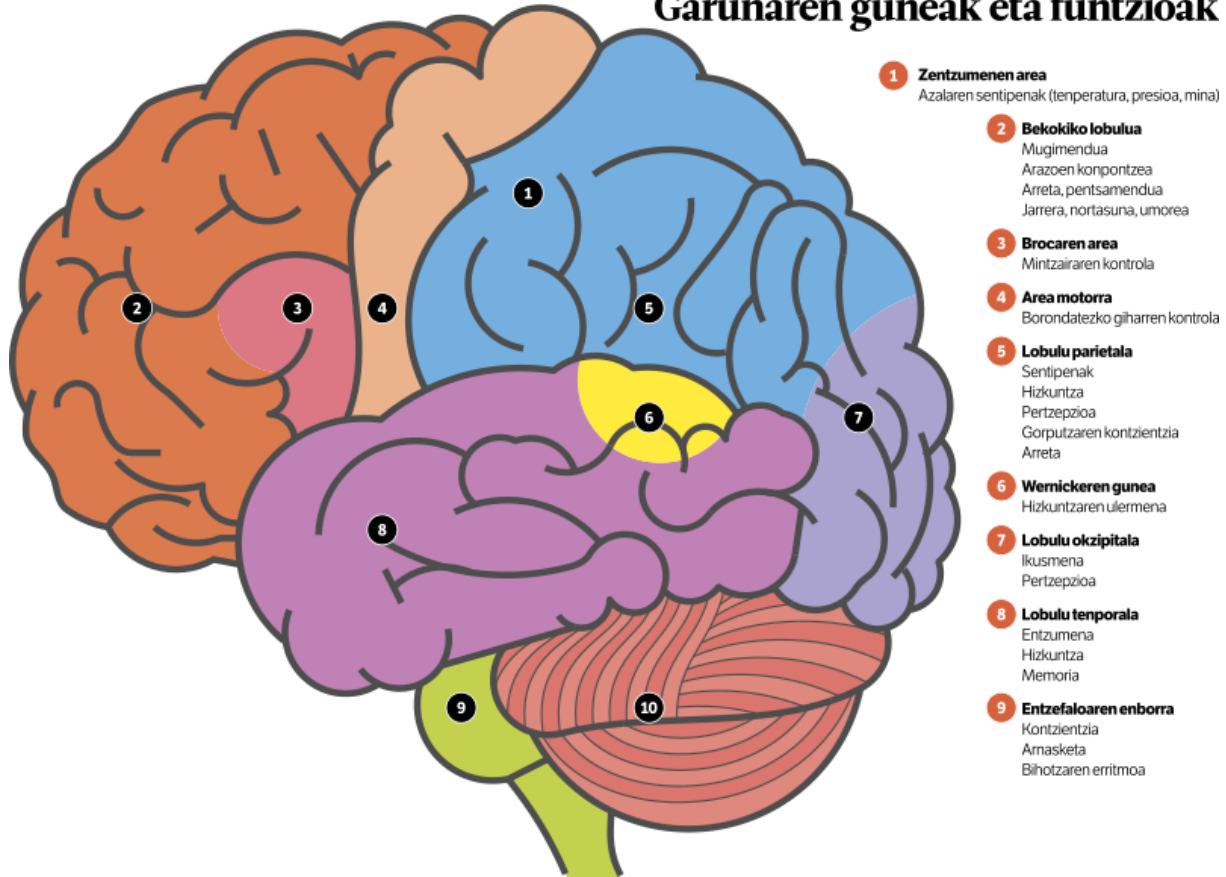
Garuna

Garunaren guneak eta funtzioak



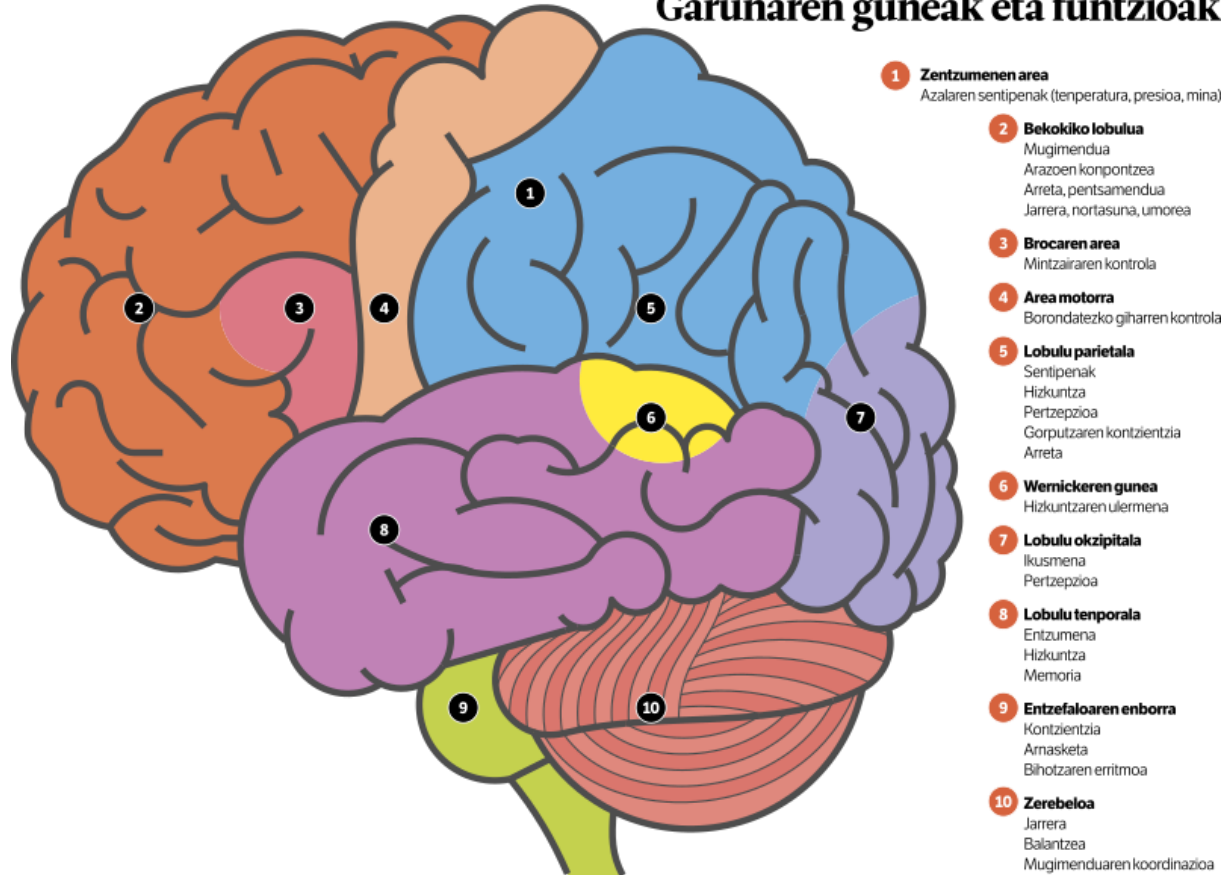
Garuna

Garunaren guneak eta funtzioak



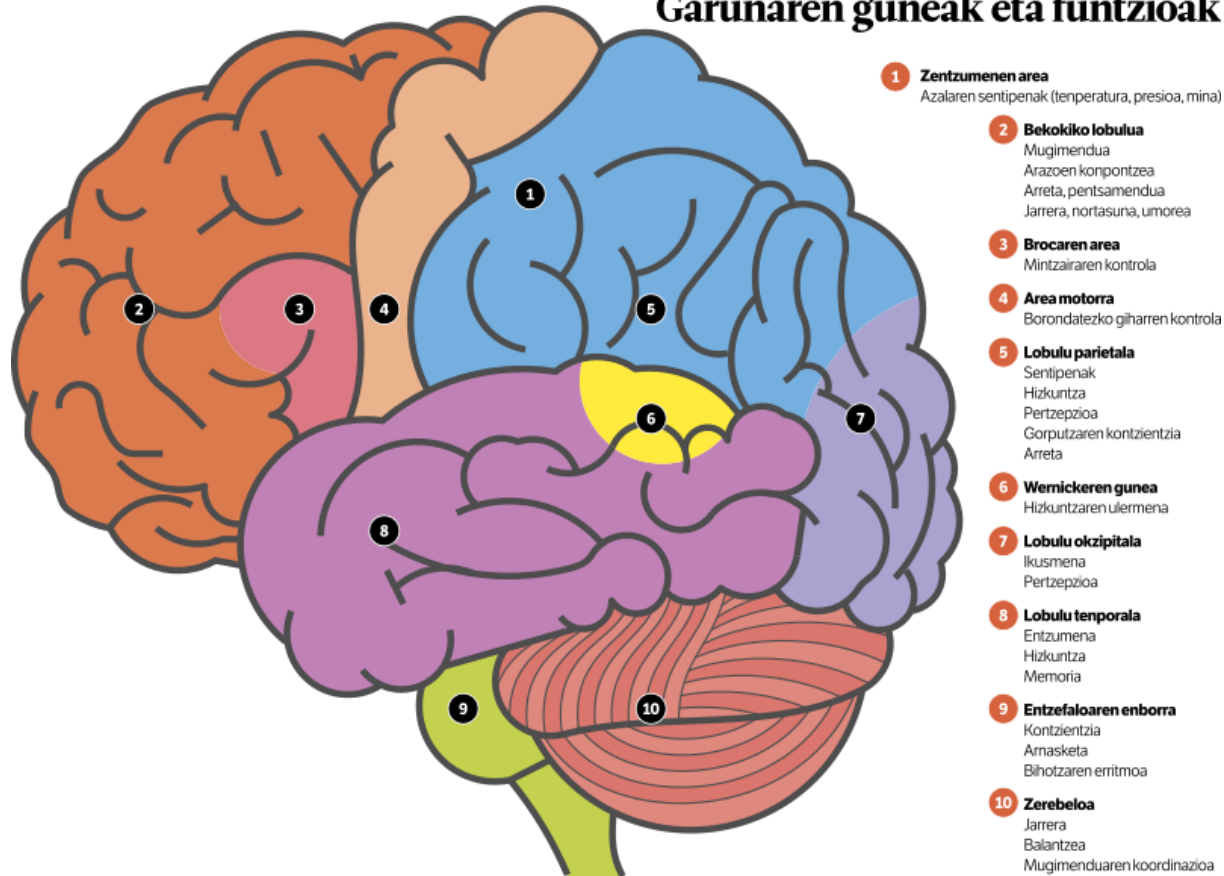
Garuna

Garunaren guneak eta funtzioak

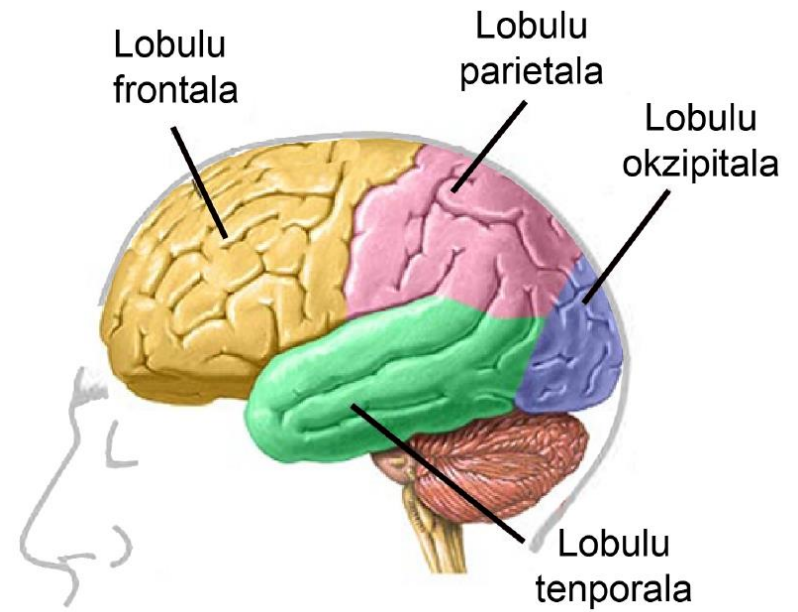
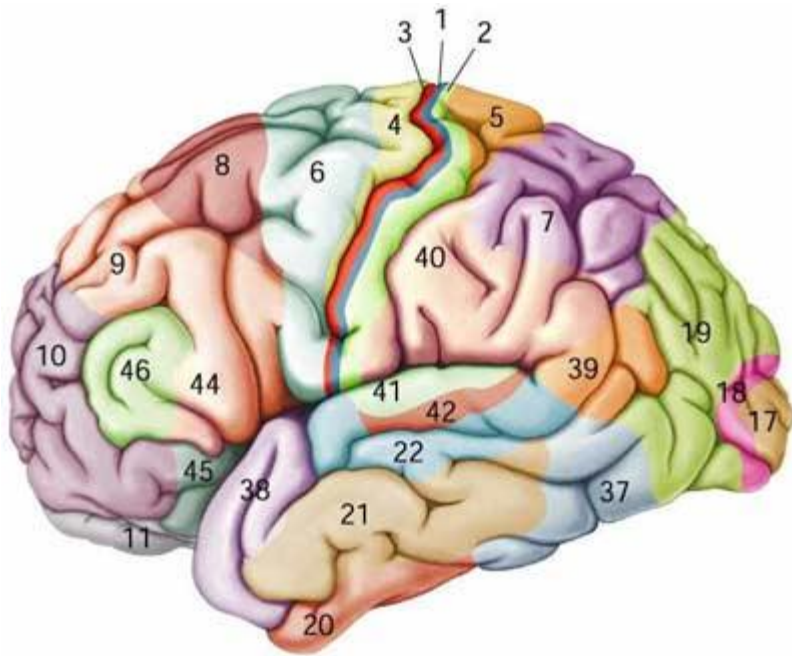


Garuna

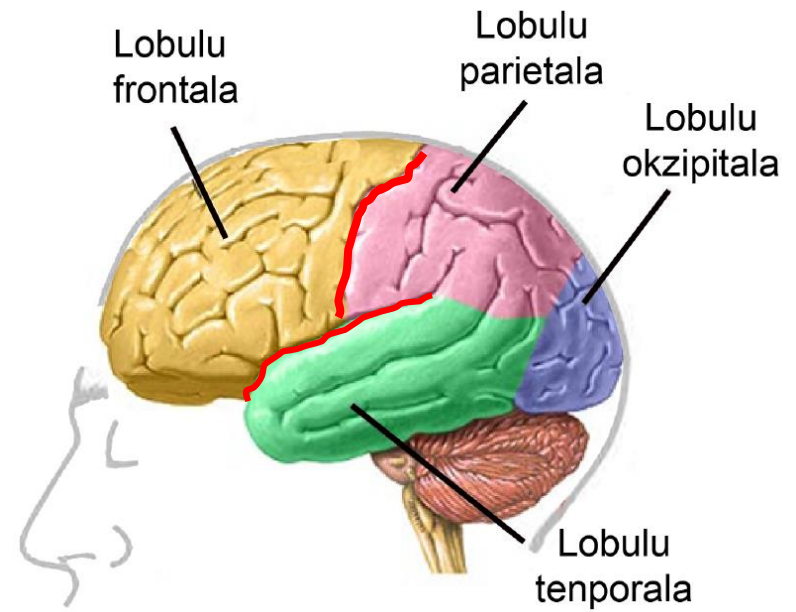
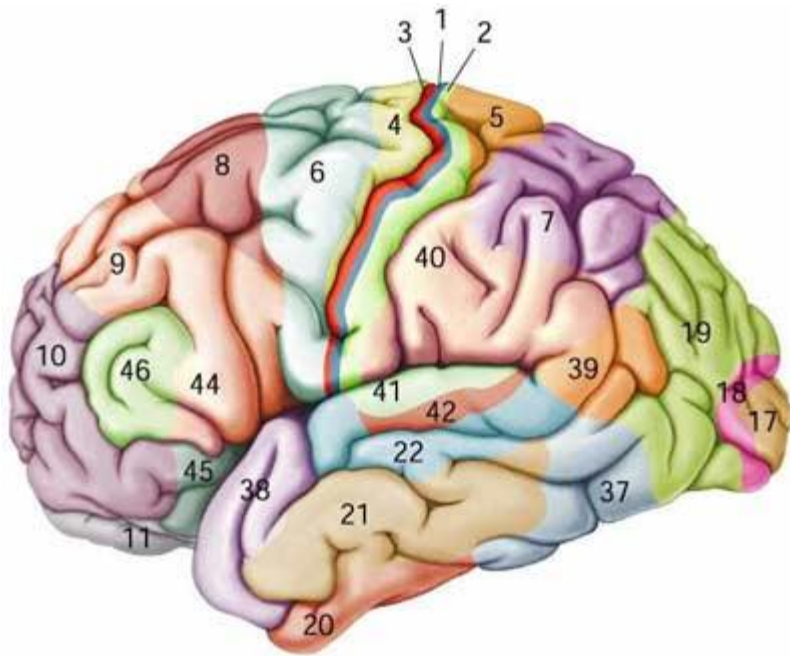
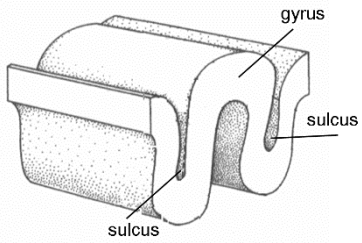
Garunaren guneak eta funtzioak



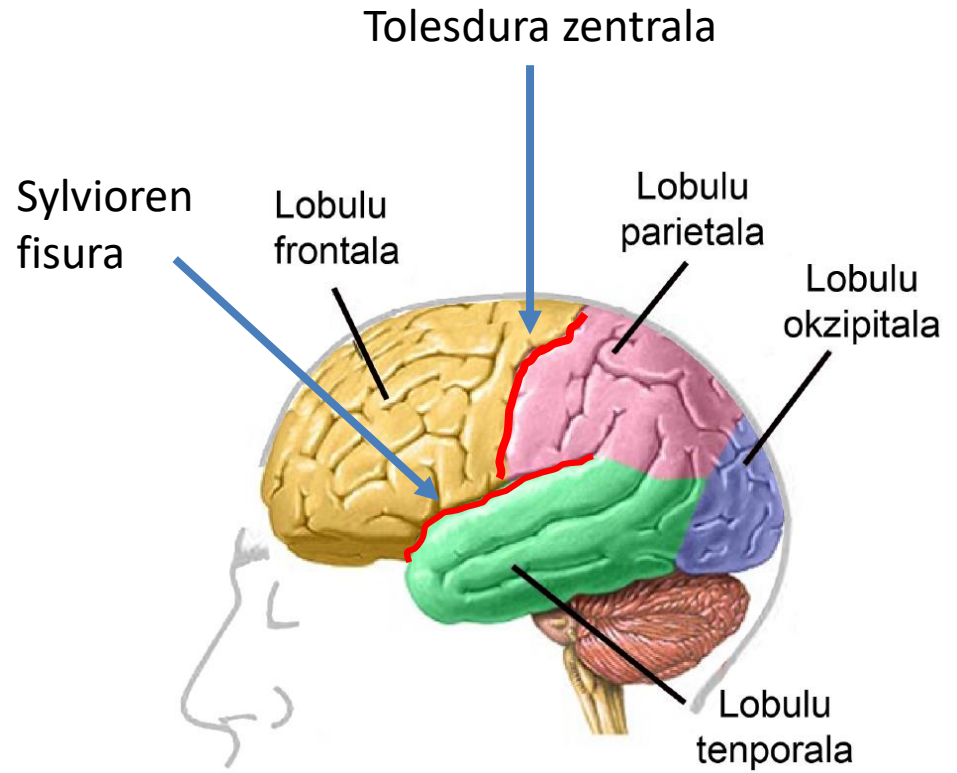
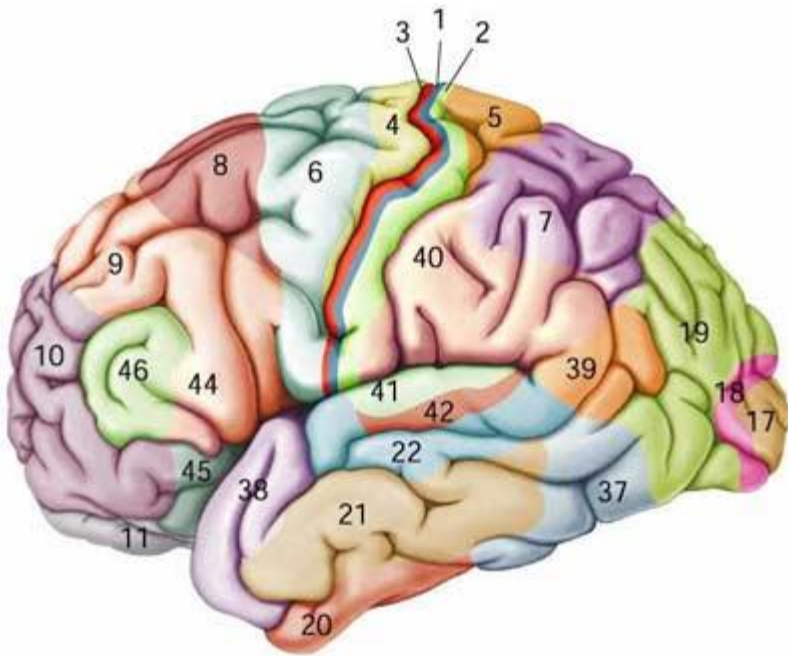
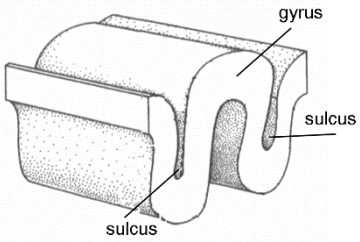
Garuna



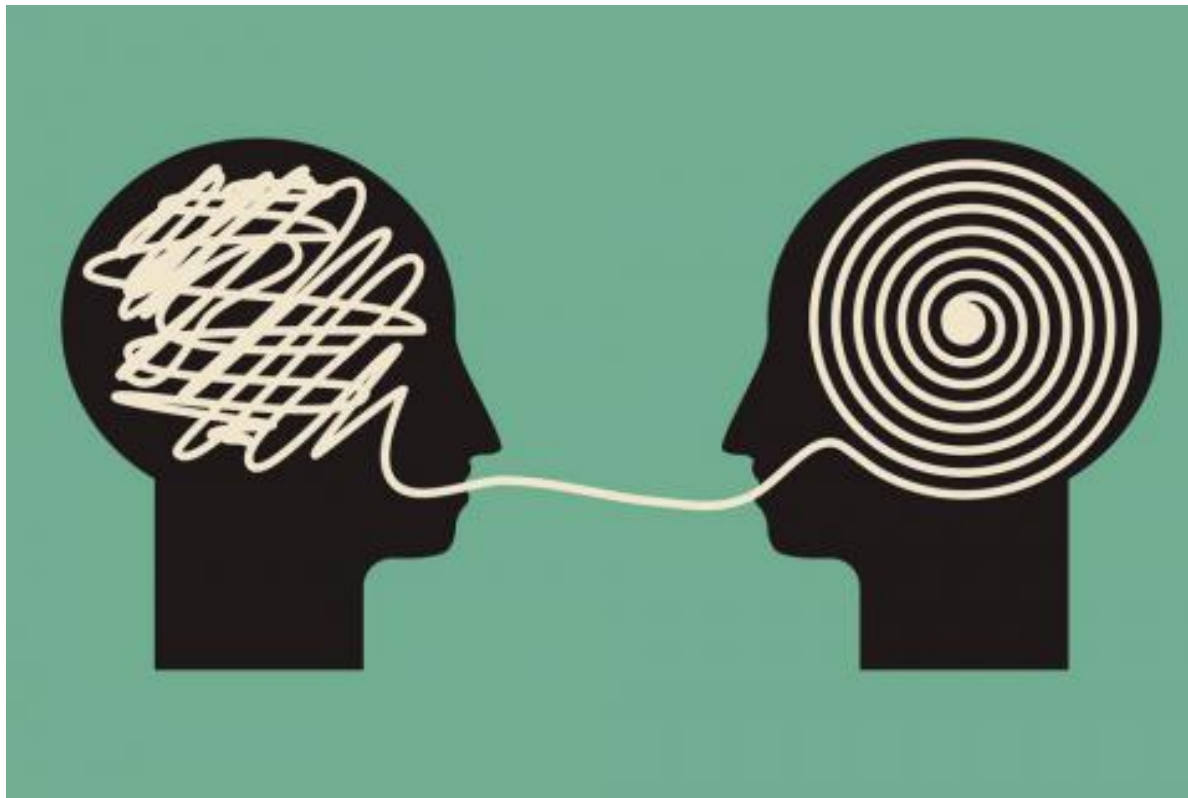
Garuna



Garuna



2. Hizkuntza burmuinean



<https://bit.ly/2uokjQr>

b. Afasiak

Beste patologiak

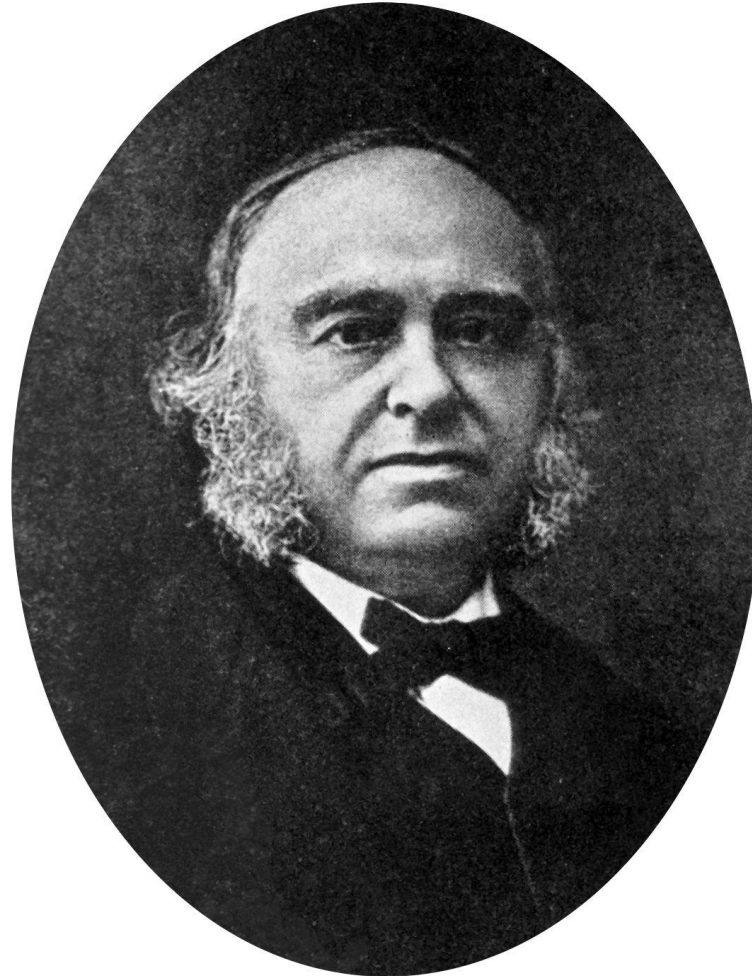
- Oharkabetasun bisual/espaziala
 - Garun-isuri baten ondorioz
 - Gehienetan eskuin hemisferioko lobulu parietalean
 - Gehienetan kontrako hemisferioan eragina

Afasiak, zer dira?

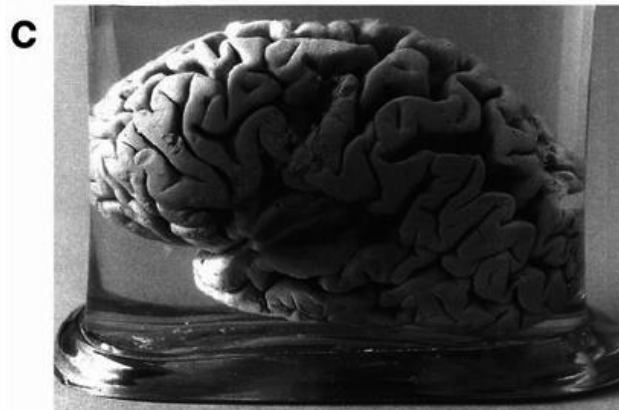
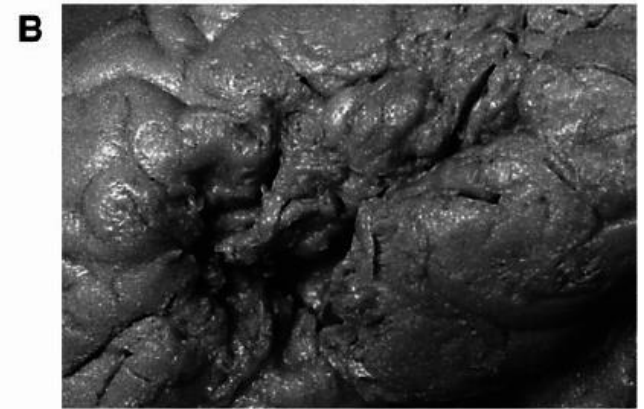
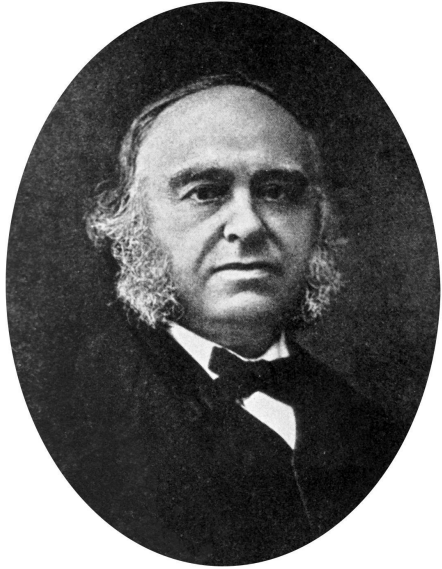
“Afasiak hizkuntza ekoitzi, ulertu eta errepikatzeko orduan garunean jasandako kalte baten ondorioz garatutako arazoak dira. kalte horiek, adibidez, istripu kardiobaskularrak, tumoreak, zauriak edo etengabeko endekapena izan daitezke.”

(Kemmerer, 2014: 71)

Paul Broca (1824-1880)



Paul Broca (1824-1880)



Carl Wernicke (1848-1905)



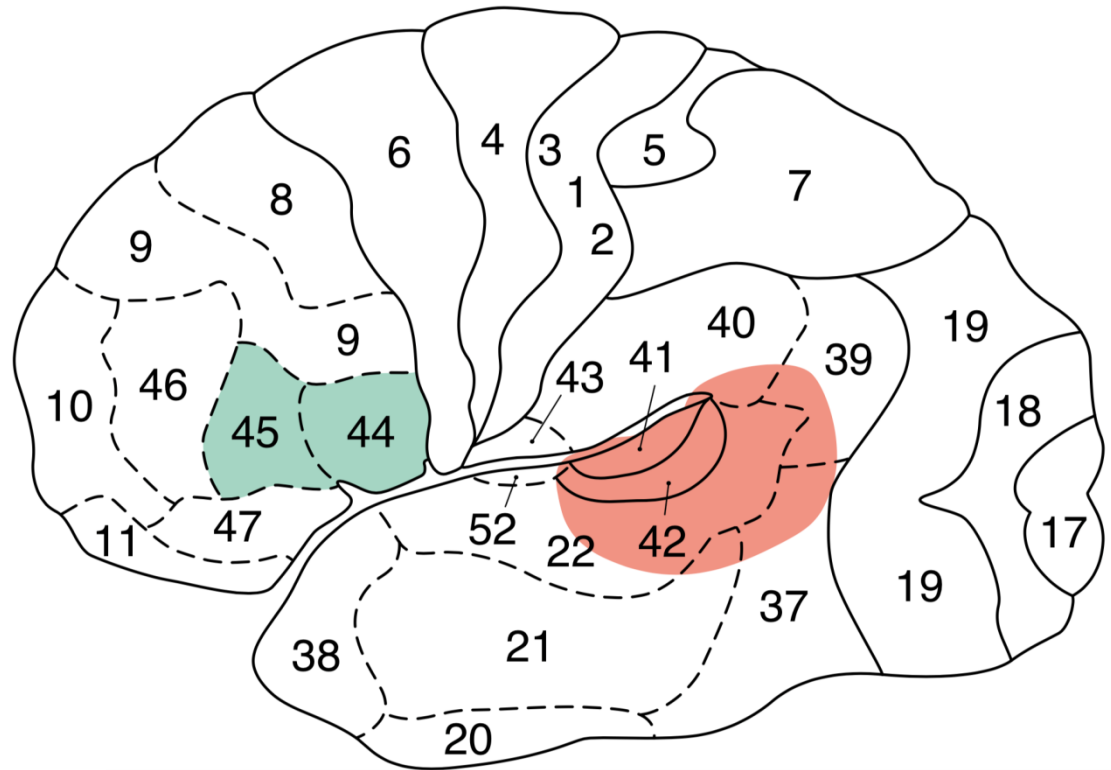
Broca y Wernicke eremuak

Broca eremua

Hizkuntzaren ekoizpena

Wernicke eremua

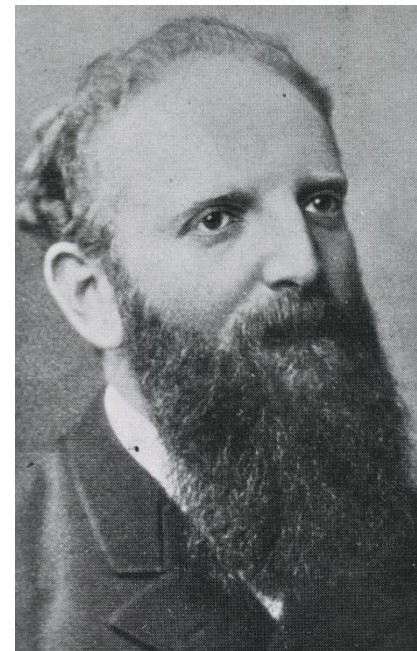
Hizkuntzaren ulermena



Kaan & Swab (2002)

Ludwig Lichtheim (1845-1928)

- Lichtheim-en modeloa
 - Lesioaren kokapenaren arabera:
 - afasia mota bat
 - Ondorio komunikatibo jakin batzuk
 - 7 afasia mota bereizi



Norman Geschwind

- (Wernicke-) Geschwind modelo (1970)

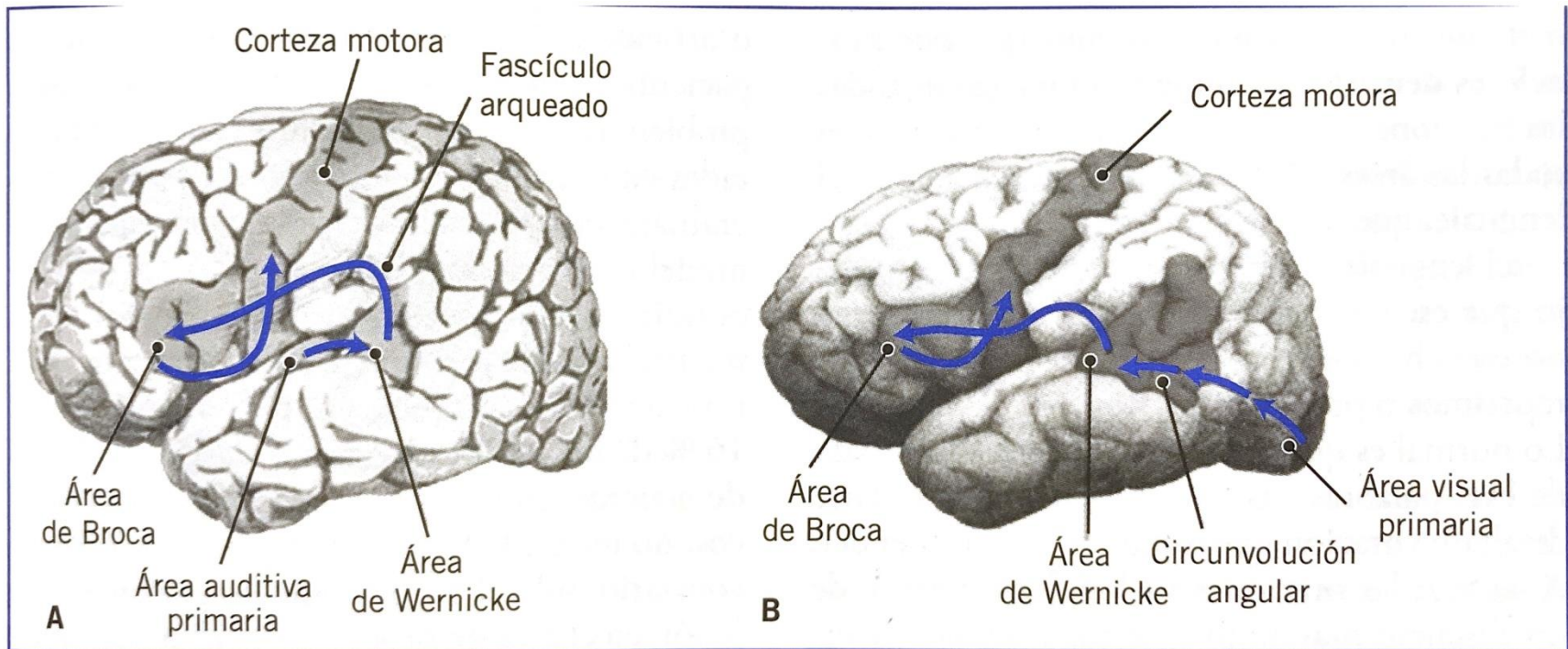


Figura 3-2. Modelo de Geschwind sobre el procesamiento del lenguaje en el cerebro. Las flechas azules indican el flujo de información neuronal. A) Pronunciación de palabras oídas. B) Pronunciación de palabras escritas.

Afasien deskribapena

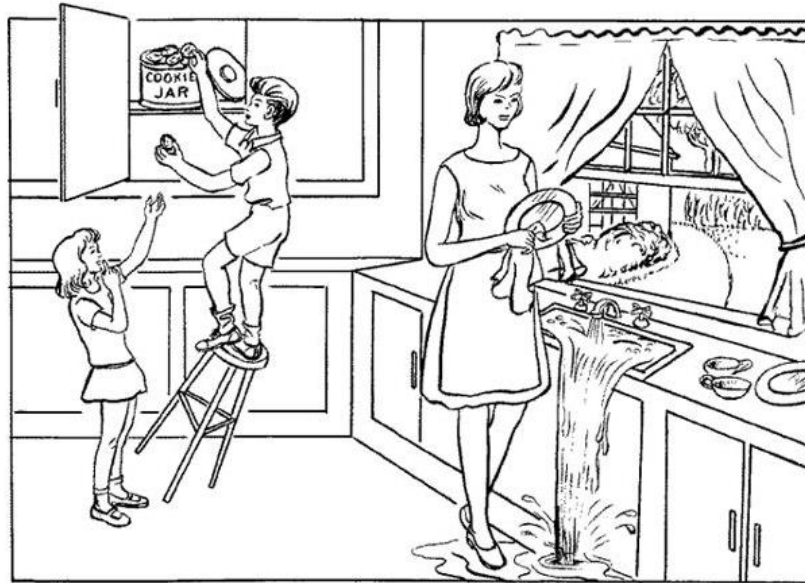
1. Ekoizpena
2. Ulermena
3. Errepikapena
4. Lokalizazioa

Afasia motak

1. Broca afasia
2. Wernicke afasia
3. Kondukzio afasia
4. Afasia globala
5. Afasia anomikoa

Bostoneko orria

The 'cookie-theft' picture



Copyright © 1983 by Lee & Fetisov

From the Boston Diagnostic Aphasia Examination - Goodglass & Kaplan, 1983

Broca afasia

Ekoizpena

Jario gutxikoa, batzutan apraxia zantzuekin
Esaeretaz lagundu
Arazo gehiago aditzekin izenekin baino
Arazo gehiago kategoria funtzionalekin lexikoekin baino
Konplexutasun sintaktiko murriztua

Ulermena

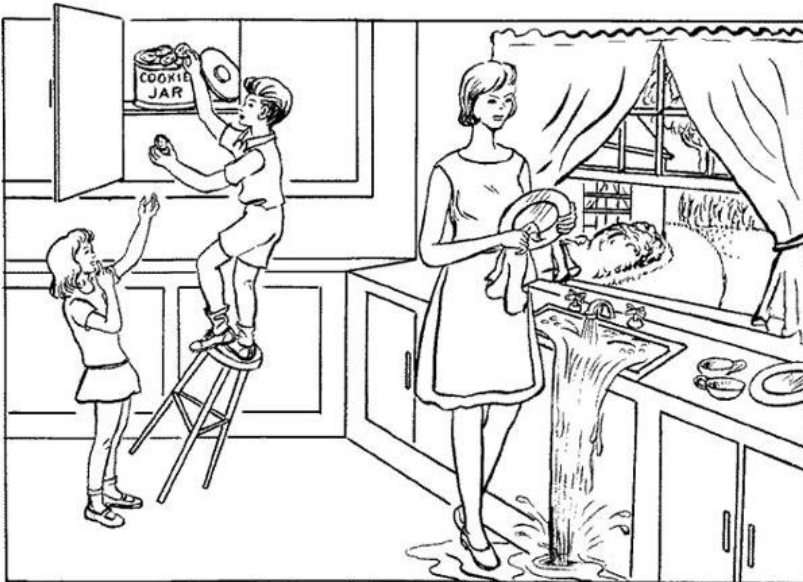
Nahiko ondo mantendua
Arazoak sintaktikoki konplexuak diren egiturekin

Errepikapena

Arazoak, bereziki hitz bat baino gehiago ekoitzi behar dutenean eta kategoria funtzionalak errepikatu behar dituztenean

Broca afasia

The 'cookie-theft' picture



Copyright © 1983 by Lee S. Feliper

From the *Boston Diagnostic Aphasia Examination* - Goodglass & Kaplan, 1983

kid ... kk can ... candy ... cookie ... candy ...
well I don't know but it's writ ... easy does it ...
slam ... fall ... men ... many no ... girl ... dishes
... soap ... soap ... water ... water ... falling pah
that's all ... dish ... that's all ... cookies ... can ...
candy ... cookies cookies ... he ... down ... that's
all ... girl ... slipping water ... water ... and it hurts
... much to do ... her ... clean up ... dishes ... up
there ... I think that's doing it ... [The examiner
asks: What is she doing with the dishes?] discharge
no ... I forgot ... dirtying clothes [?] dish [?] water
... [The examiner probes: What about it?] slippery
water ... scolded [?] ... slipped

Obler & Gjerlow (1999: 41)

Bideoa ingelesez: <https://www.youtube.com/watch?v=JWC-cVQmEmY&frags=pl%2Cwn>

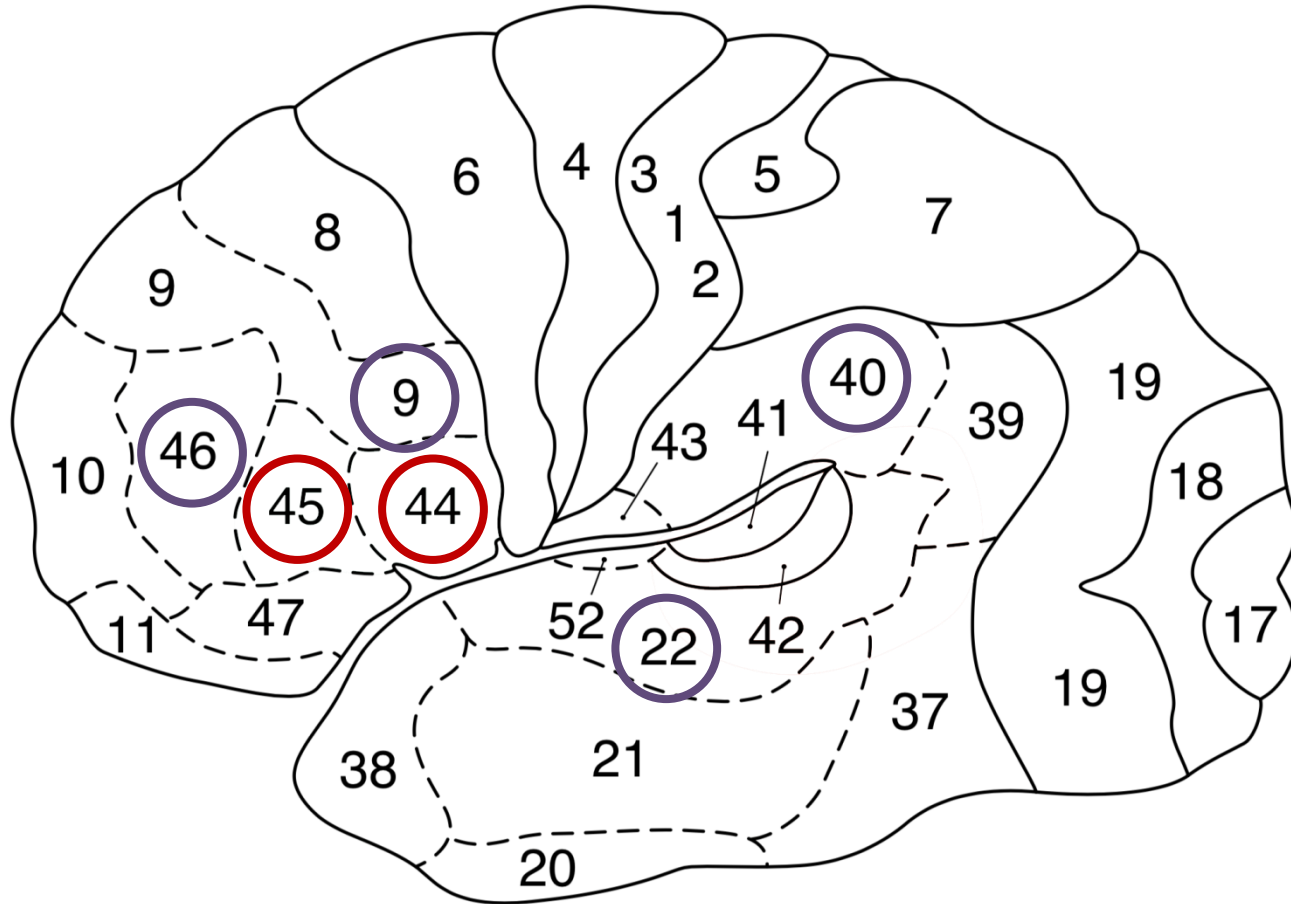
Bideoa gaztelera: https://www.youtube.com/watch?v=xrTP_6iaq0s

Broca afasia

- 1) The reporter [who attacked the senator]
- 2) The reporter [who the senator attacked]

- 3) [senataria atakatu zuen] kazetaria
- 4) [senatariak atakatu zuen] kazetaria

Broca afasia



Wernicke afasia

Ekoizpena

Jario handikoa, askotan jario gehiegikoa
Maiz parafasia fonetikoak
Batzutan urraketa morfologiko eta sintaktikoak
Pazienteak ez dira kontziente izaten

Ulermena

Hondatua esaldi, esamolde eta askotan baita hitzetako ere

Errepikapena

Arazoak, hitzen aukeraketari dagokionez, egitura fonologikoarekin eta egitura gramatikalekin

Wernicke afasia

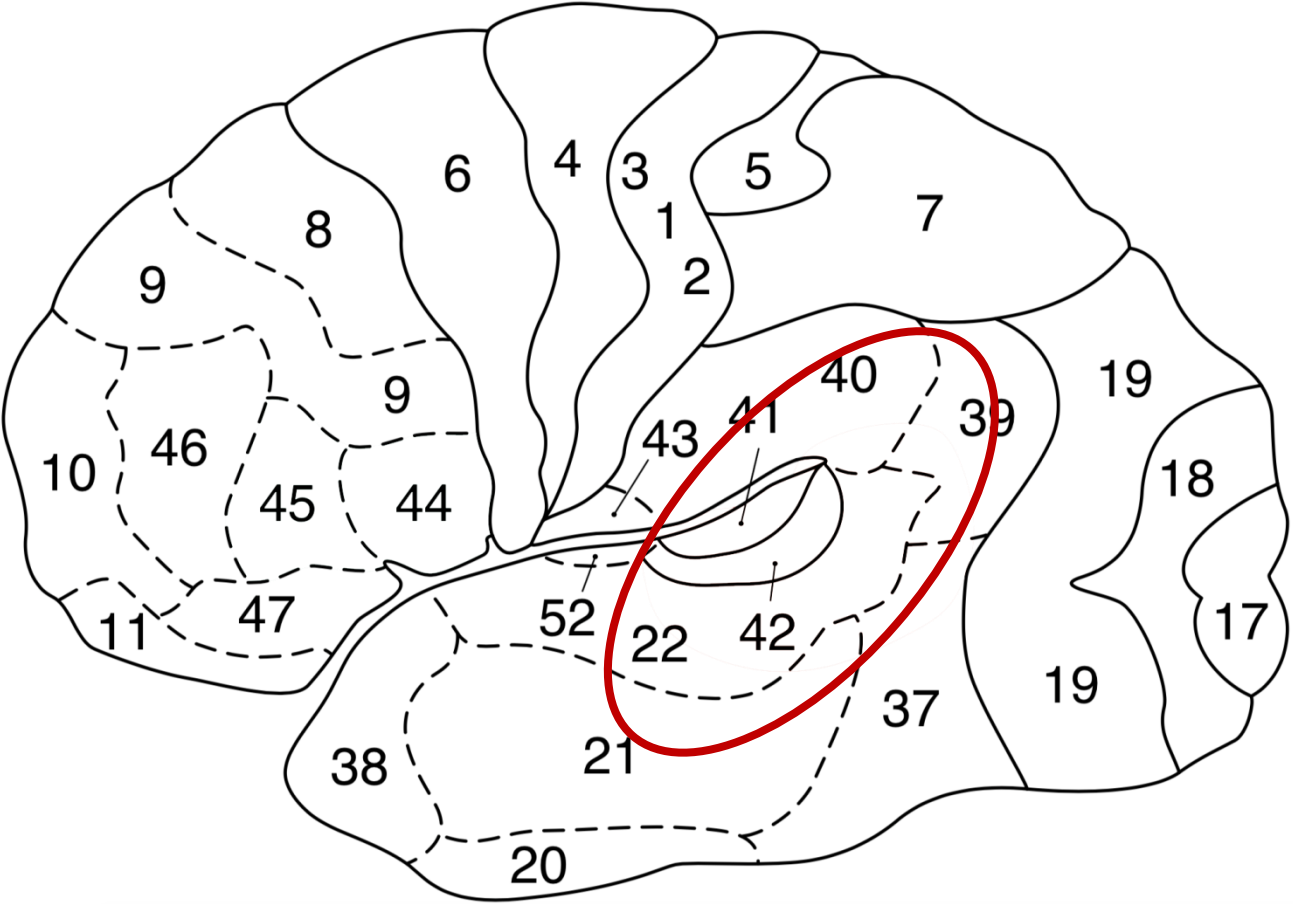
Is this some of the work that we work as we did before? ... All right ... From when wine [why] I'm here. What's wrong with me because I ... was myself until the taenz took something about the time between me and my regular time in that time and they took the time in that time here and that's when the the time took around here and saw me and around in it it's started with me no time and then I began [began] work of nothing else that's the way the doctor find me that way ...

Obler & Gjerlow (1999: 43)

Bideoa ingelesez: <https://www.youtube.com/watch?v=3oef68YabD0&frags=pl%2Cwn>

Bideoa gaztelera: <https://www.youtube.com/watch?v=4corrSyDsJ0>

Wenicke afasia



Kondukzio afasia

Ekoizpena

Broka afasiadunek baino jario handiagoa, baina Wernicke afasiadunek baino txikiagoa
Maiz parafasia fonetikoak
Etengabeko saiakerak egituraren soinua ongi ahoskatzeko (kontziente dira)

Ulermena

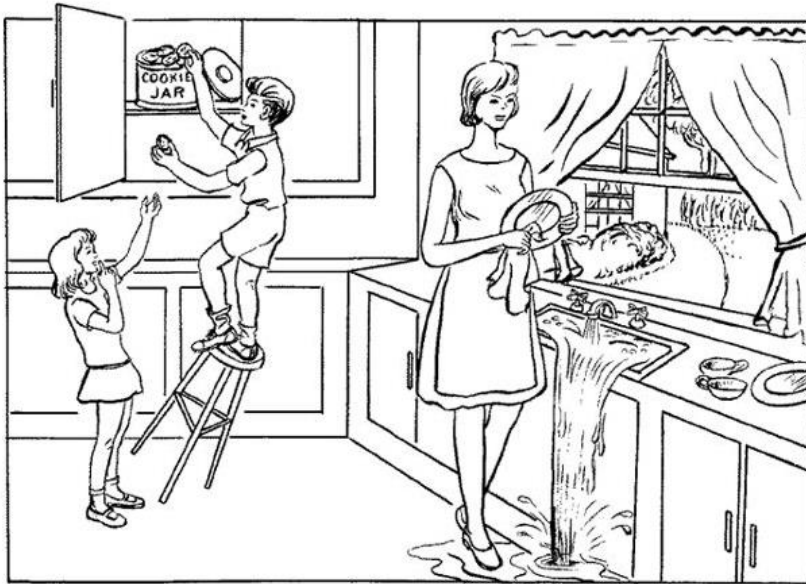
Nahiko ondo mantendua
Arazoak sintaktikoki konplexuak diren egiturekin

Errepikapena

Arazoak esaldi, esamolde eta askotan baita hitzetako ere

Kondukcio afasia

The 'cookie-theft' picture



Copyright © 1983 by Lee & Fetig

From the Boston Diagnostic Aphasia Examination - Goodglass & Kaplan, 1983

Examiner: Tell me about what's going on in this picture.

Patient: Oh ... he's on top o' the ss ... ss ... swirl ... it's a ... ss ... sss ... ss ... sweet ... stool ... stool. It's fallin' over. An' the girl, ... the boy is ... ss ... 'ettin' his sister a He's. He'ss givin' her a ss ... a ... sss ... sss ... ssl ... s ... ss ... sl cook ... It's a soos ... ss ... ss ... sss ...

Examiner: So he's giving his sister a cookie. What else is happening?

Patient: Well he's he's fillin' out the ch ch ch ... Oh, anyhow, his mother is ... she's bissy, but the water's fallin' over ... The water is fallin' over the ... the ... er ... the er ... It's going flink ... ss ...

Examiner: Yes, it's falling over the sink.

Patient: Sull ... sit ... flink ... er ...

Examiner: Listen to me: sink.

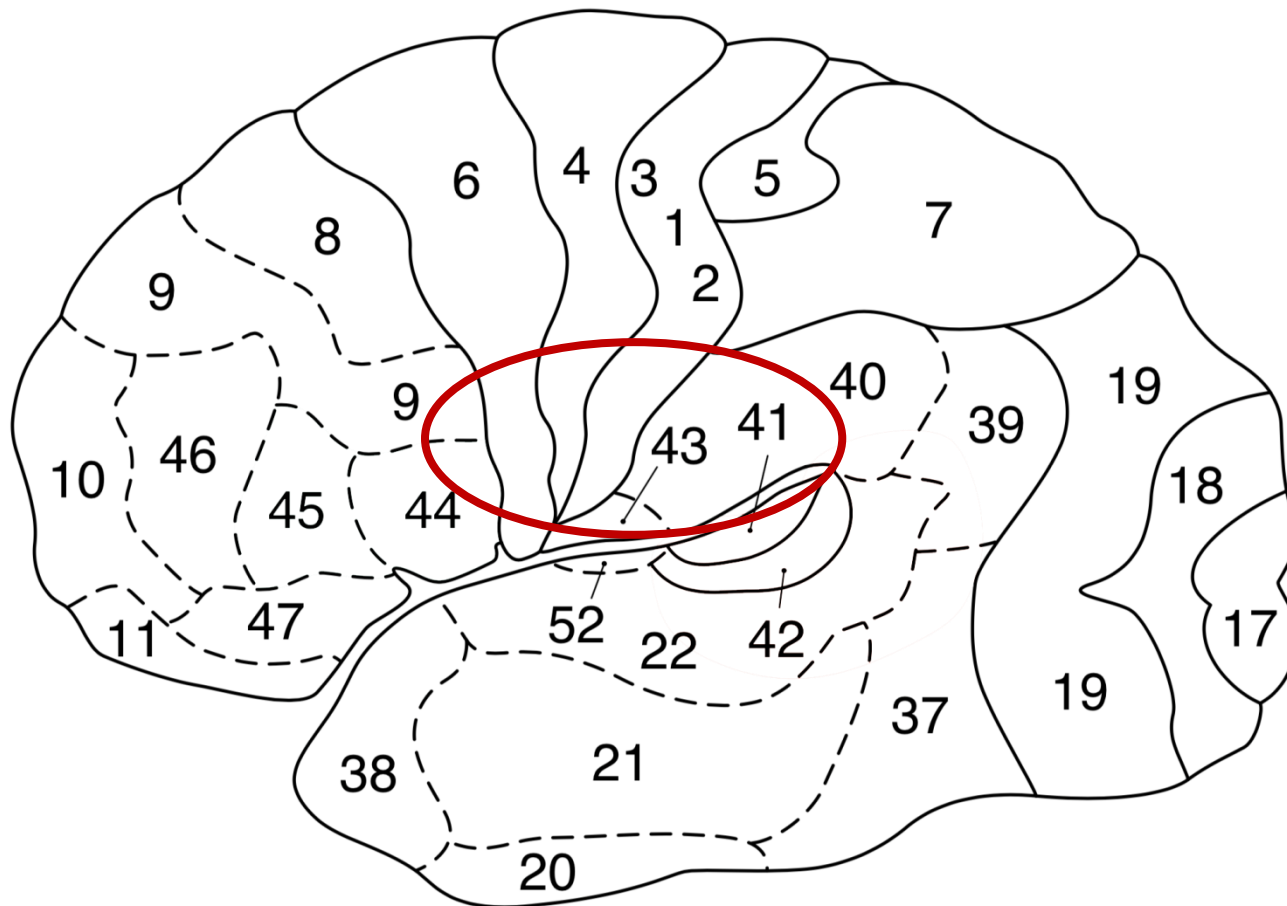
Patient: Stink ... sink ... sink ... sink ...

Examiner: OK, what is she doing there?

Patient: She's drawing the ... she's drying the dishes.

Goodglass & Wingfield (1997: 8-9)

Kondukcio afasia



Afasia globala

Ekoizpena

Ezindua

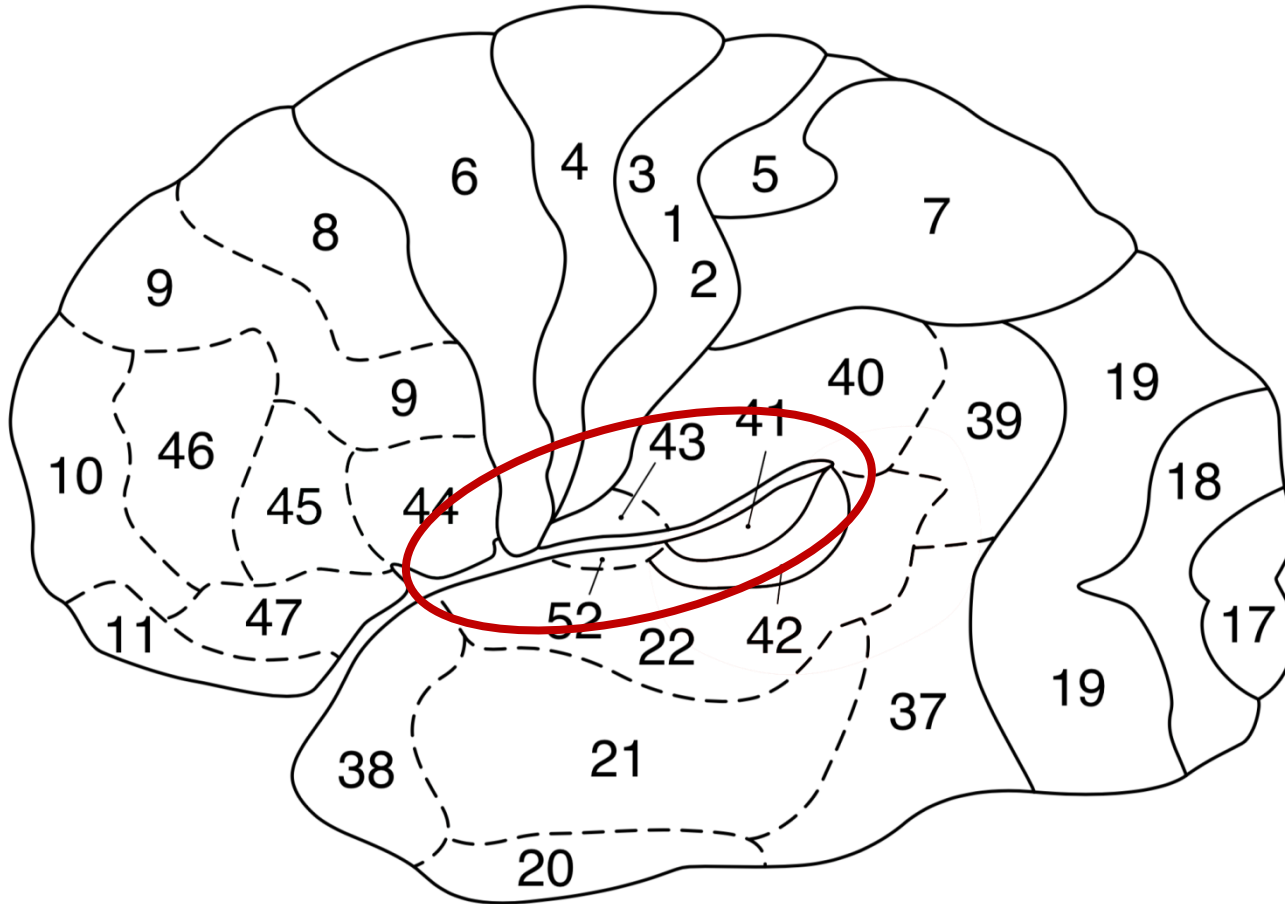
Ulermena

Ezindua

Errepikapena

Ezindua

Afasia globala



Vídeo: <https://www.youtube.com/watch?v=j3v36fBSwII&frags=pl%2Cwn>

Afasia anomikoa

Ekoizpena

Jarioratasun ona baina zalantzekin

Hitz markatuak bilatzeko zailtasunak, batzutan okerrago kategoria batzuekin beste batzuekin baino

Ulermena

Nahiko ongi

Errepikapena

Nahiko ongi

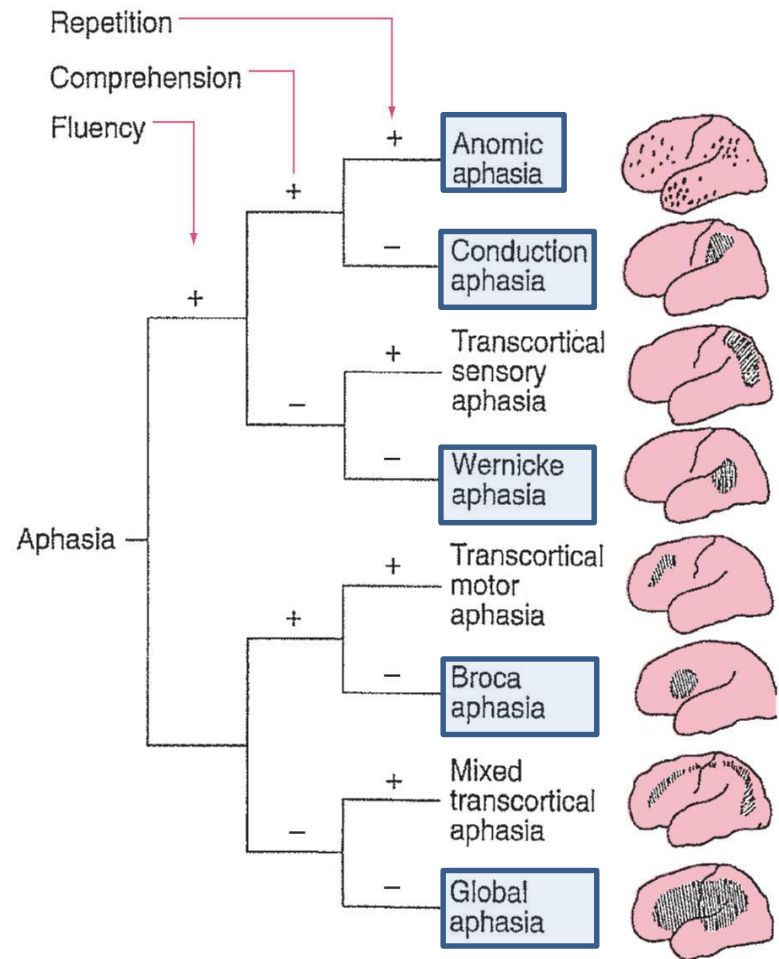
Afasia anomikoa

- Okila: “Bird, makes a hell of a noise”
- Ardia: “Lamb, but more than that”
- Zulagailua: “Everyone needs one, to take things out or put things in”
- Aterkia: “If it’s raining you’ve got to have one”

Kemmerer et al. (2005)

Bideoa: <https://www.youtube.com/watch?v=w95EF3fW2IA&frags=pl%2Cwn>

Afasia sindromeen klasifikazio tradizionala



Plastizitatea



Iturria: XStudio3D/Shutterstock

Afasia mota?

M.E.

Cinderella...poor...um 'dopted her...scrubbed
floor, um, tidy...poor, um...'dopted...Si-sisters
and mother . . . ball. Ball, prince um, shoe . . .

Examiner

Keep going.

M.E.

Scrubbed and uh washed and un...tidy, uh,
sisters and mother, prince, no, prince, yes.
Cinderella hooked prince. (Laughs.) Um,
um, shoes, um, twelve o'clock ball /pønaút/
finished.

Examiner

So what happened in the end?

M.E.

Married.

Examiner

How does he find her?

M.E.

Um, Prince, um, happen to, um...Prince, and
Cinderalla meet, um met um met.

Examiner

What happened at the ball? They didn't
get married at the ball.

M.E.

No, um, no...I don't know. Shoe, um found shoe...

Afasia mota?

C.B.

Uh, well this is the ... the /døðøü/ of this.
This and this and this and this. These things
going in there like that. This is /sen/ things
here. This one here, these two things here.
And the other one here, back in this one, this
one /gP?/ look at this one.

Examiner

Yeah, what's happening there?

C.B.

I can't tell you what that is, but I know what
it is, but I don't now where it is. But I don't
know what's under. I know it's you couldn't
say it's ... I couldn't say what it is. I couldn't
say what that is. This shu-- that should be right
in here. That's /bêïli/ bad in there. Anyway,
this one here, and that, and that's it. This is
the getting in here and that's the getting around
here, and that, and that's it. This is getting in
here and that's the getting around here, this one
and one with this one. And this one, and that's it,
isn't it? I don't know what else you'd want.

Oinarrizko bibliografia

- Kemmerer, D. (2014). *Cognitive neuroscience of language*. Psychology Press.
- Bestelako irakurgaiak:
 - Cuetos Vega, F., González Álvarez, J., & Vega Rodríguez, M. D. (2015). *Psicología del lenguaje* (No. 159.964. 3/. 4). Editorial Médica Panamericana.
 - Munarriz-Ibarrola, A. (2018). Hizkuntzak burmuin elebidunean; zer erakusten du gaztelania-euskara elebidun afasiko baten kasu-azterketak?. *Ekaia: Euskal Herriko Unibertsitateko zientzi eta teknologi aldizkaria*, (1), 191-208.