

Experimental Demonstration of the tomatotopic organization in the soprano (*Cantatrix sopranica L.*)

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Sommaire: *Démonstration expérimentale d'une organisation tomatotopique chez la Cantatrice.*

L'auteur étudie les fois que le lancement de la tomate il provoque la réaction yellante chez la Chantatrice et démontre que divers plusieurs aires de la cervelle elles étaient impliquées dans la réponse, en particulier le trajet légumier, les noyaux thalamiques et le figure musicien de l'hémisphère nord.

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As observed at the turn of the century by Marks & Spencer (189), who first named the « yelling reaction » (YR), the striking effects of tomato throwing on Sopranos has been extensively described. Although numerous behavioral

distinguish 3 unit subtypes: 1) units responding before the stimulation, 2) units responding during the stimulation and 3) units responding after the stimulation.

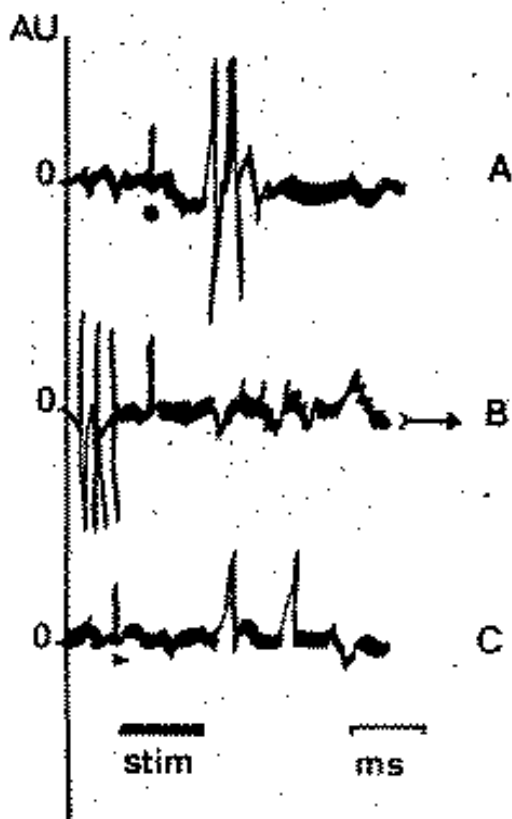


FIG. 1 - Unit activity in structures responding to the tomatoc stimulation. Bar indicates stimulus onset & cessation. Calibration: 3.1416 ms. Each trace is made of the superimposition of 1957 successive recordings. Note the point in A, the arrow in B and the black triangle in C.

Cross-examination of responses driven by other projectiles and Ketchup stimulation are shown on figure 2 and argue unquestionably in favor of a tomatotopic organization of the YR along, between and across the NARTpl, apTL and scMS. Temporal relationships of those responses, as exemplified in fig.3, showed that the hypothesis of a clustering interdigitation of neuronal subnets is highly probable, although no experimental evidence can be given due to the relative difficulty of entering those damned structures without destroying a lot of things (Timco *et al.*, 1971).

Discussion It has been shown above that tomato throwing provokes, along with a few other motor, visual, vegetative and behavioral reactions, neuronal responses in 3 distinctive brain areas: the nucleus anterior reticular thalami, pars lateralis (NARTpl), the anterior portion of the tractus leguminosus (apTL) and the dorsal part of the so-called musical sulcus (scMS). As pointed out by Chou & Lai (1929 b), Lai & Chou (1931 a, b) and Unsofort & Tchetera (1972), the YR organization cannot be simply reduced to an oligosynaptic facio-facial nociceptive reflex which would have relayed over in the fascia leguminosa of the VIth laminations of the ventral quadrants of the paleospino- rubro-yello-tectocerebello-nigrostriatal tomatotonic ascending pathways. For the fact that horseradish peroxidase injected into the Sopranoes' vocal cords is retrogradually transported from the apical dendrites of the vagus

Regions	Tomatoc stimulation					
	1/s	2/s	3/s	4/s	5/s	15/s
whole brain	0.0	0.0	4.2	0.6	0.7	000.1
raphe area	3.1	4.1	5.9	5.9	5.9	000.2
septum	± 1	67	875	121	000	$\pi 3517$
thalamus	2.2	$\sqrt{3}$	456	± 7	8.9	0.0001
NARTpl	456	+2	-4	$\beta\beta$	«2»	± 0.001
hypothalamus	$\pm''3$	1&2	41	S.G	121	many
hippocampus	1/2	3%	$\sqrt{\int 7}$?	< 16	0, $\pm \pm 7$
cereb. cortex	yes	< 55	nsp	$\left\{ \begin{matrix} 0 \\ 0 \end{matrix} \right\}$	$\pm \infty$	71 \pm 70
scMS	~ 31	~ 65	> 87	00+	$\frac{345}{\{4\}}$	a few
apTL	0.0	3.1	6.7	$\sqrt{4}$	-	56%
amygdala	+3	± 3	3.3	333	3	$\int 3.33$
N. Poissy	$\rightarrow 8$	0.0	$\rightarrow 1$	12 \leftarrow	M/5	1+1=2
N. Pesch	384	781	$\uparrow 2$	$\downarrow 34$!	!!!!
N. ruber	$\Delta 51$???	\sum_4^3	\int_0^7	415	maybe

TABLE ONE. Differential responding of tomatoc stimulation in the brain at different frequencies.

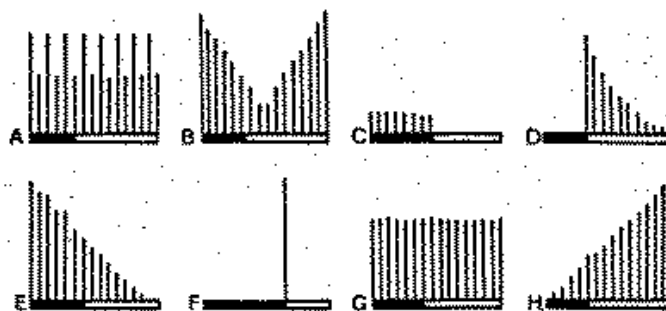


FIG. 2 - Examples of responses in the apTL provoked by tomato and other throwings. Explanations in text. A = tomato; B = apple; C = cabbage; D = hats; E = roses; F = ketchup*; G = pumpkin; H = bullet. * Kindly provided by Laroche-Ciba. Inc.

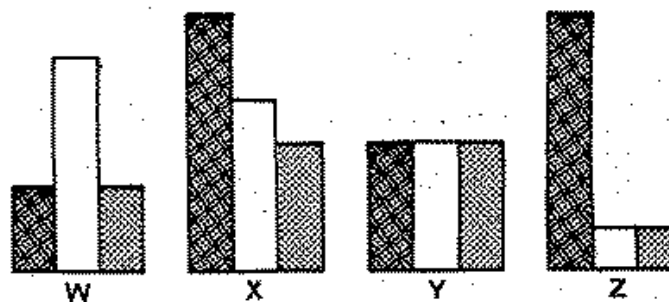


FIG. 3 - Temporal relationships of the responses recorded in the YR area. Abscissae: arbitrary units; ordinates: international units. Explanation in text.

nerves to the tomato-tomatic synapses of the contralateral pseudo-gasserian afferents (McHulott *et al*, 1975) proves with some likelihood the leguminous nature of the mediator responsible for the transmission of the message from the receptive tomato fields to the YR circuitry (Colle *et al*, 1973). Thus, 3,5 (M-tri) argyryl- β -L- tomatase which is selectively trisynthesized in the NARTpl- apTL bundle and whose destruction blocks up. drastically the YR (Others *et al* 1974) stands out as the major candidate for the transmitter involved in the YR retroacting loop, although an alternate hypothesis based upon latency calculations, and co- cross frequency correlations, puts

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