Appendixes of: Castro-Chavez, F. The Digram I Ching Genetic Code Compresses the Genetic Code into 24 Compatible Main Codons. Biomed J Sci & Tech Res 20(2): 14834-14843; 2019. BJSTR.MS.ID.003413.

Appendix 1.

Table representing the positional arrangement of the codon groups when we consider the C-rings of the nucleotides, being the "C" for "Carbon", the "R" for "Purine" and the "Y" for "Pyrimidine" (added the products of multiplying the R = 3 = A = G, while the Y = 2 = C = U), keeping the same alternate relation as before (when using the H-bonds, only with the difference that here the subdivision to sum the 24 groups is given by the S and not by the * as with the H-bonds), giving us now 23 groups due to the current fusion in one big group of the Leucine (L); the same "musical" relation of Pythagoras 3/2, 2/3, 3/2, 2/3 in the four horizontals macro-groups is kept as when the initial relation with the H-bonds was done:

CR-CR	**-1stCR**	GGG	GGA	AGG	AGA	GAG	GAA	AAG	AAA
	G or A	G=27	G=27	R=27	R=27	E=27	E=27	K=27	K=27
1-1	**-1stCR**	GGC	GGU	AGC	AGU	GAC	GAU	AAC	AAU
	G or A	G=18	G=18	S=18	S=18	D=18	D=18	N=18	N=18
CY-CR	**-3rdCY**	CAC	CAU	GCC	GCU	ACC	ACU	CGC	CGU
	C or U	H=12	H=12	A=12	A=12	T=12	T=12	R=12	R=12
0-1	**-3rdCR**	CAG	CAA	GCG	GCA	ACG	ACA	CGG	CGA
	G or A	Q=18	Q=18	A=18	A=18	T=18	T=18	R=18	R=18
CR-CY	**-3rdCR**	AUG	AUA	GUG	GUA	UGG	UGA	UAG	UAA
	G or A	M=18	I=18	V=18	V=18	W=18	*=18	*=18	*=18
1-0	**-3rdCY**	AUC	AUU	GUC	GUU	UGC	UGU	UAC	UAU
	C or U	I=12	I=12	V=12	V=12	C=12	C=12	Y=12	Y=12
CY-CY	**-1stCY**	CCC	CCU	UUC	UUU	CUC	CUU	UCC	UCU
	C or U	P=8	P=8	F=8	F=8	L=8	L=8	S=8	S=8
0-0	**-1stCY**	CCG	CCA	UUG	UUA	CUG	CUA	UCG	UCA
	C or U	P=12	P=12	L=12	L=12	L=12	L=12	S=12	S=12

Figure 8. Relation of C-rings in the Genetic Code.

Appendix 2.

Table representing the positional arrangement of the codon groups when we consider the tautomerism of nucleotides, being the “T” for “Tautomer”, the “E” for “Enol/Keto” (or vice versa for U and G, forming a triple H-bond) and the “I” for “Imino/Amino” (or vice versa for A and C, forming a double H-bond) and (added the products of multiplying the E = 3 = U = G, while the I = 2 = C = A), keeping the same alternate relation as before (when using the H-bonds and when using, above, the C-rings); again, the same “musical” relation of Pythagoras 3/2, 2/3, 3/2, 2/3 in the four horizontals macro-groups is kept as when the initial relation with the H-bonds was done:

TE-TE	**-1stTE**	**GGU**	**GGG**	**UUU**	**GUU**	**GUG**	**UUG**	**UGU**	**UGG**
	U or G	**G=27**	**G=27**	**F=27**	**V=27**	**V=27**	**L=27**	**C=27**	**W=27**
1-1	**-1stTE**	**GGC**	**GGA**	**UUC**	**GUC**	**GUA**	**UUA**	**UGC**	**UGA**
	U or G	**G=18**	**G=18**	**F=18**	**V=18**	**V=18**	**L=18**	**C=18**	***=18**
TI-TE	**-3rdTI**	**GCC**	**GCA**	**CUC**	**CUA**	**AUC**	**AUA**	**UAC**	**UAA**
	C or A	**A=12**	**A=12**	**L=12**	**L=12**	**I=12**	**I=12**	**Y=12**	***=12**
0-1	**-3rdTE**	**GCG**	**GCU**	**CUG**	**CUU**	**AUG**	**AUU**	**UAU**	UAG
	U or G	**A=18**	**A=18**	**L=18**	**L=18**	**M=18**	**I=18**	**Y=18**	***=18**
TE-TI	**-3rdTE**	**GAU**	**UCG**	**UCU**	**CGG**	**CGU**	**AGG**	**AGU**	**GAG**
	U or G	**D=18**	**S=18**	**S=18**	**R=18**	**R=18**	**R=18**	**S=18**	**E=18**
1-0	**-3rdTI**	**GAC**	**UCC**	**UCA**	**CGA**	**CGC**	**AGA**	**AGC**	**GAA**
	C or A	**D=12**	**S=12**	**S=12**	**R=12**	**R=12**	**R=12**	**S=12**	**E=12**
TI-TI	**-1stTI**	**AAU**	**AAA**	**CAC**	**ACC**	**ACA**	**CAA**	**CCC**	**CCA**
	C or A	**N=12**	**K=8**	**H=8**	**T=8**	**T=8**	**Q=8**	**P=8**	**P=8**
0-0	**-1stTI**	**AAC**	**AAG**	**CAU**	**ACU**	**ACG**	**CAG**	**CCG**	**CCU**
	C or A	**N=8**	**K=12**	**H=12**	**T=12**	**T=12**	**Q=12**	**P=12**	**P=12**

Figure 9. Relation of Tautomerism in the Genetic Code.

Reference for this Appendix 2: Khuu, P., & Ho, P. S. (2009). A rare nucleotide base tautomer in the structure of an asymmetric DNA junction. Biochemistry 48(33): 824-7832.

Appendix 3.

Concluding this appendix: These 20 replacements have been perpetrated to my favorite Mexican text:

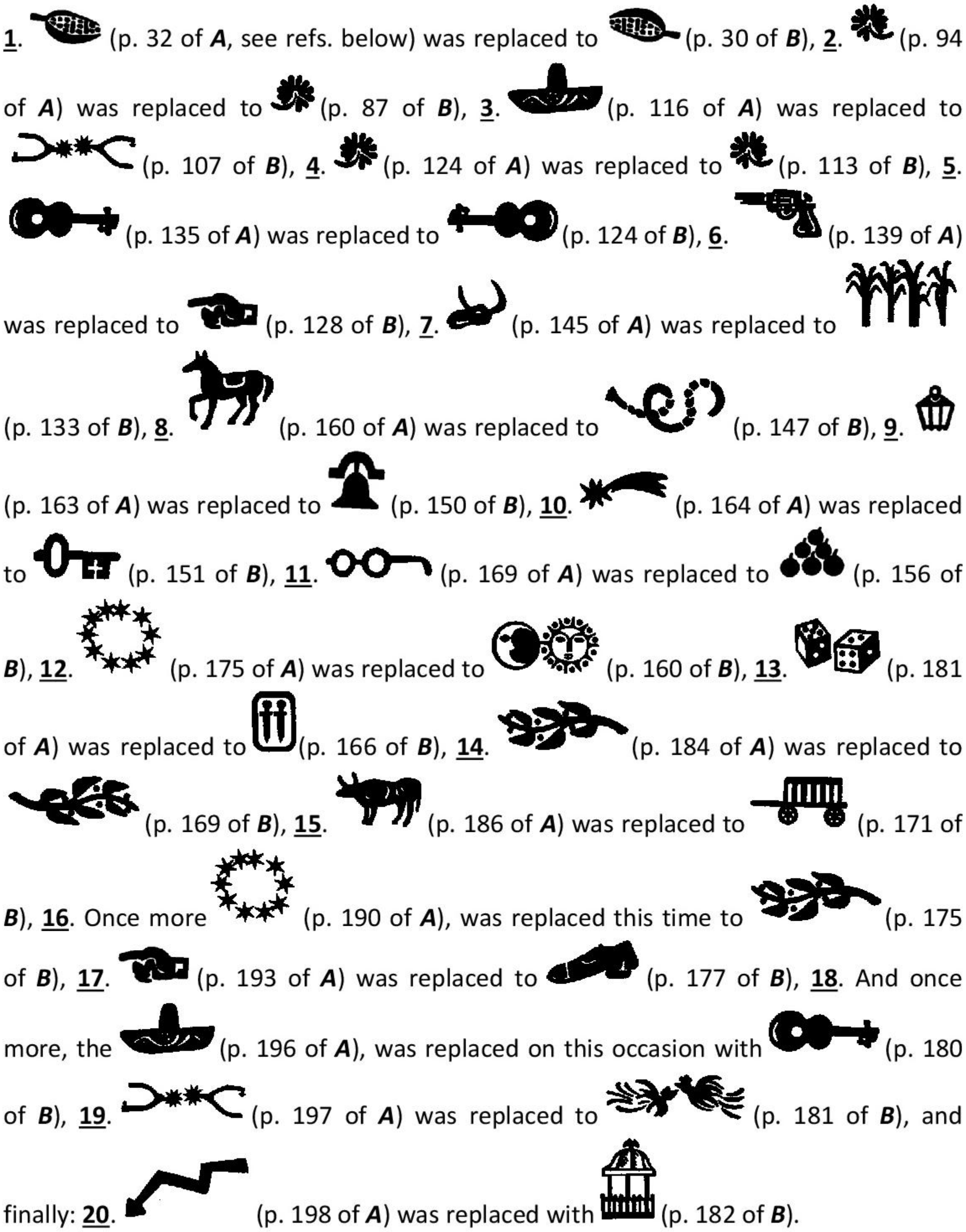

Figure 10. Relation of the 20 adulterations in "The Fair" by Juan José Arreola. Further information about these "mutational" changes in books: https://www.amazon.com/gp/product/B07GZZ9ZWS and

https://www.amazon.com/gp/product/B07JJF3X2N, in Spanish for now (more details about the specific context of each history and the significance of the adulteration or replacement to be discussed in an article in Spanish elsewhere).

Note: Having celebrated the 100th birthday of my best Mexican educator: Juan José Arreola, I did the discovery that his novel "La feria" ("The fair") was tampered in precisely 20 vignettes between the versions published in the 60s (1963, 1964, 1966; the ones with five vignettes on the cover) and the ones published starting on 1971 (the ones with the red cover), and this done by his same publisher "Joaquín Mortiz". For the record I leave here the respective adulterations and its corresponding pages in their order of appearance (being the first the one of the 60s and the second the 1971 one (see ref.), per each, as seen in the image below).

References for this Appendix 3:

A. ORIGINAL: Arreola, Juan José. "La feria". [First edition]. D.F.: *Joaquín Mortiz* ("Serie del volador"; *Editorial Muñoz, S. A.*; 4,000 ejemplares; "Asteriscos de Vicente Rojo"), 5-XI-1963:200 p.

B. *ADULTERATED*: Arreola, Juan José. La feria. [In: "Obras de J. J. Arreola". "First edition"]. D.F.: *Joaquín Mortiz* (*Editorial Muñoz, S. A.*; 6,300 ejemplares; it does not say, as it used to say before: "Asteriscos de Vicente Rojo"), between the 15th & the 29th of Nov., 1971:184 p.

Appendix 4.

At the last moment, as a plus, I wanted to consign an amazing capture that I did:

I want to emphasize here, at the last minute, the tremendous importance of colors, in my most current captures, in relation to the electric storms, those that to the naked eye look almost always just like white (because of its high speed. Remember the colored rotating circle at full speed..., or the fast processes of the DNA replication and of transcription, which then also, theoretically, may look as white: "When they rotate at full speed (like in a "*disco zumbador*"), blend themselves producing the white color (Newton, 1730, quoted below)."), but that to the cell phone camera, they can be captured with all the colors of the visual range; here are some that I was able to film recently (on the 28th of July, 2019, between 10 PM and 11:30 PM on the Prol. of L. Cárds. 42, at Ajijic, Jal., MX): https://youtu.be/z0-rMArtTJY, compiled from my videos at: https://youtu.be/OQVPSj0Y4gk, https://youtu.be/VJovhGFGOvE, and https://youtu.be/UeR4kAa9Ju0" And, to commemorate the 50th Anniversary of the landing on the Moon (07/20/69): https://youtu.be/3BNRwz-WeKs, and music: https://youtu.be/PmzKVLTCXBQ

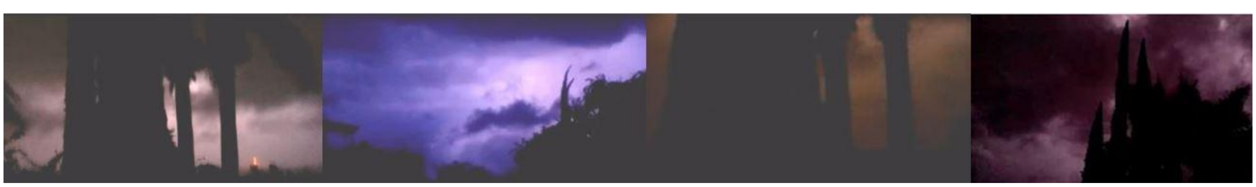

Figure 11. Some of the visual wavelength spectrum colors of an electric storm: Brown, blue, red, purple.

Reference for this Appendix 4: Castro Chavez, F (2011). The quantum workings of the rotating 64-grid Genetic Code. NeuroQuantology 9(4):728-746.