

Semiotics, software and media visualization

E. Reyes

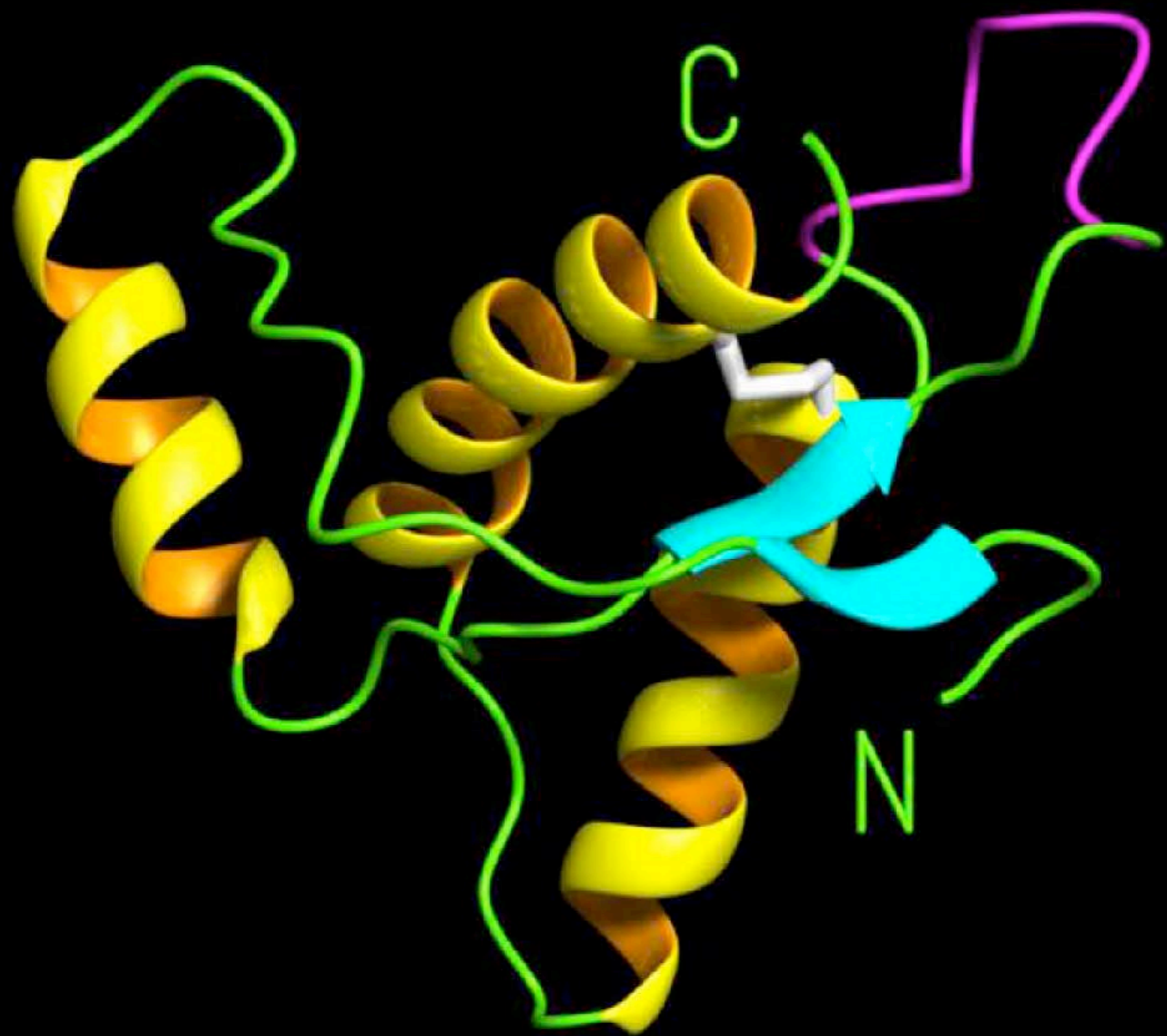
Associate Professor, Université de Paris 13

ereyes.net

Conference at Anaglifos Art Factory, Barcelona, Spain, on June 1st.

Semiofest 2013

Coordinator: Gabriela Pedranti



**Media
visualization**



Lev **Manovich**

**Scientific
imagery**



Jacques **Fontanille**

Media visualization?

visualize large amounts of **visual media**

observe **patterns** of time

analyze **culture**

Scientific imagery?

allows to see the invisible

occurs within a scientific argument

requires scientific experience + taking decisions

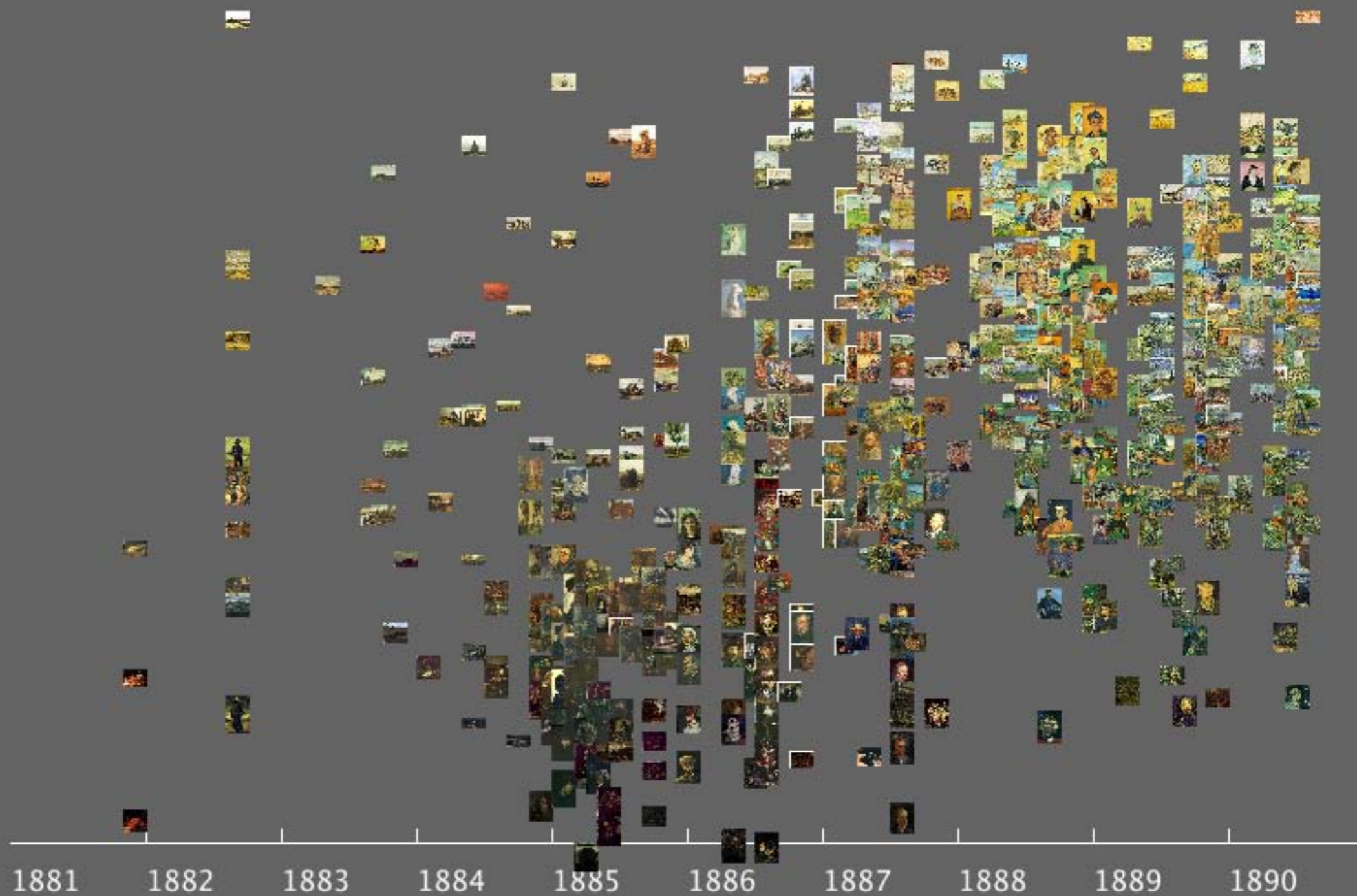
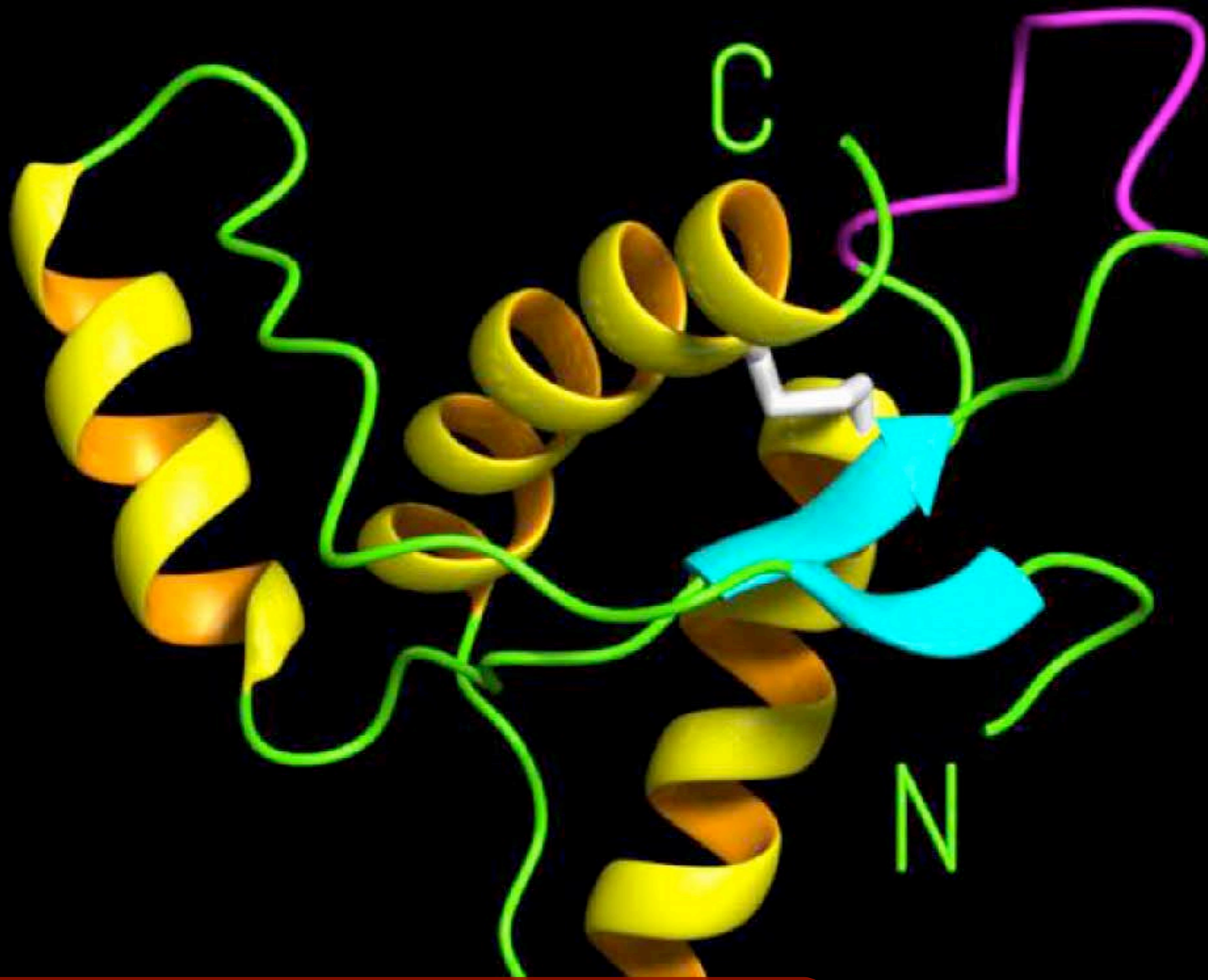


Image plot of Van Gogh production

ImagePlot, Lev Manovich, 2009



Car-Parrinello Simulations of Biological Systems

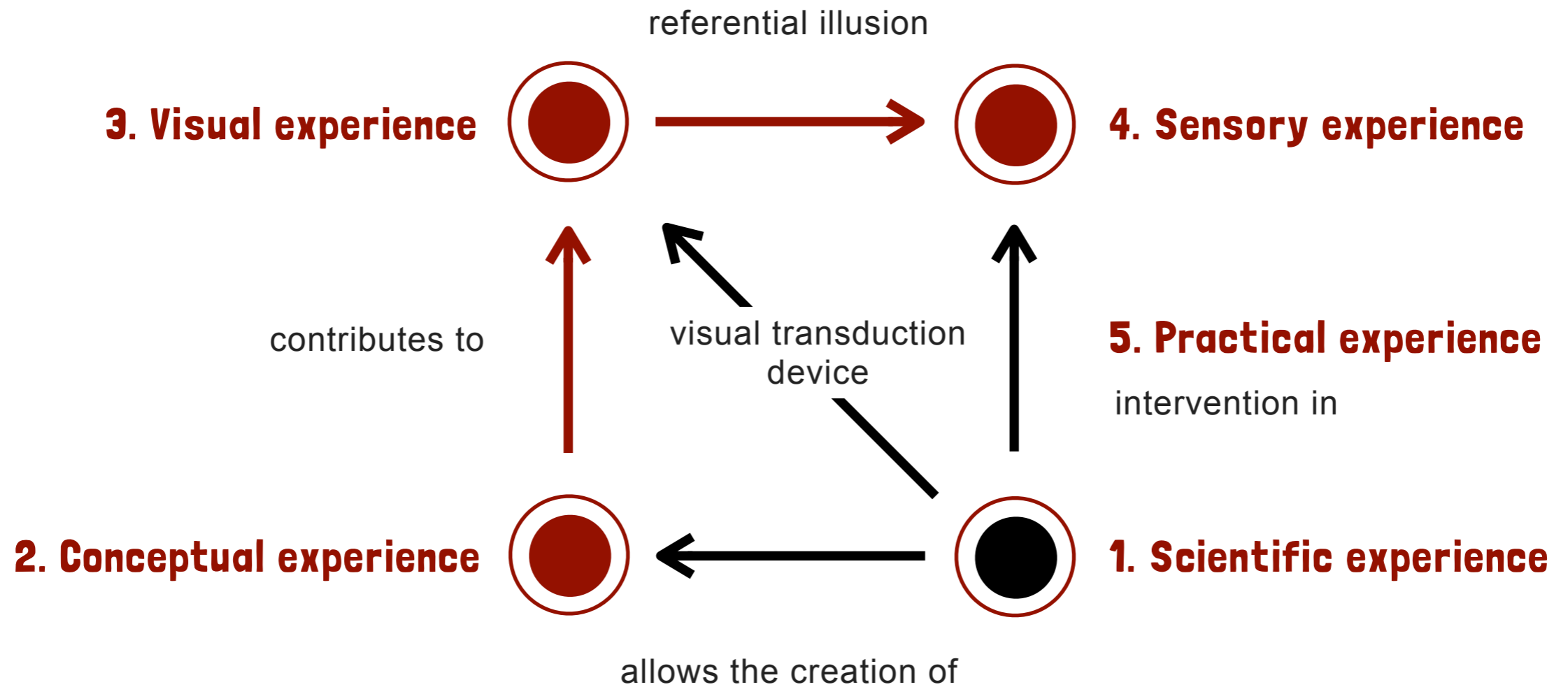
Michele Cascella, c. 2004

Expression plane

transducting measurements of
material elements

Content plane

produced by direct interpretation
during exploration



The **invisible** of visual media?

- Visual features
- Spatial and temporal patterns
- **Software operations**

389 types of visual features data

FeatureExtractor, Lev Manovich, 2011

Year	Artist	Title	Filename	File Path	Gabor 1 0	Gabor 1 45	Gabor 1 90	Gabor 1 13	Gabor 2 0	Gabor 2 45	Gabor 2 90	Gabor 2 13	Gabor 3 0	Gabor 3 45	Gabor 3 90	Gabor 3 13	Gabor 4 0	Gabor 4 45	Gabor 4 90	Gabor 4 13	Hue	Mean
0	1881	Van Gogh	Still Life with	001.jpg	/Users/cultu	90.68064	78.13922	103.3052	77.58307	85.87984	69.33095	109.7462	62.12878	118.4314	89.24543	169.3934	81.9173	155.8032	122.0388	253.6104	83.18318	0.14002
1	1881	Van Gogh	Still Life with	002.jpg	/Users/cultu	57.06778	44.58478	62.19038	49.17593	60.40412	49.64728	71.77201	56.58012	83.96798	70.06205	103.2502	80.17243	117.2963	118.2773	145.9278	118.2777	0.27809
2	1881	Van Gogh	Still Life with	003.jpg	/Users/cultu	78.84572	74.02272	110.5827	73.41237	88.37781	81.77094	157.5932	76.9777	129.6269	117.3031	250.2784	111.2162	202.9461	190.3113	344.4458	138.3469	0.13205
3	1882	Van Gogh	Beach at Sch	004.jpg	/Users/cultu	163.3311	125.5681	261.2114	128.7346	192.9979	126.8587	354.2147	133.5046	263.9987	143.3208	576.9542	162.5166	374.1985	157.3658	807.5934	207.3618	0.22300
4	1882	Van Gogh	Cluster of OI	005.jpg	/Users/cultu	112.0593	62.51589	88.35882	60.33443	139.05	54.83809	104.8606	55.45329	188.4341	63.48696	142.3233	67.16486	295.977	94.50501	203.4968	91.27709	0.32045
5	1882	Van Gogh	Dunes	006.jpg	/Users/cultu	145.2701	139.9059	220.3029	160.3988	125.8312	105.902	218.87	121.801	152.1756	122.336	343.5705	141.2909	201.6846	166.6274	546.7799	162.2804	0.13741
6	1882	Van Gogh	Edge of a W	007.jpg	/Users/cultu	135.2862	83.55577	120.6159	81.01401	177.8811	66.42074	142.1309	68.33213	274.0488	74.8337	213.1531	81.06543	266.6837	92.3715	346.8997	102.568	0.21152
7	1882	Van Gogh	Fisherman o	008.jpg	/Users/cultu	162.7641	118.1623	171.4992	110.6664	174.2014	92.3047	179.1217	90.01354	261.4108	100.3318	216.6217	111.678	457.3094	135.7475	322.2516	136.5294	0.285
8	1882	Van Gogh	Fisherman's	009.jpg	/Users/cultu	134.163	109.0077	154.7251	103.6593	128.3168	84.45449	164.7653	82.08178	176.5339	93.64103	214.9011	93.63773	288.2418	140.884	295.5059	131.5274	0.35005
9	1882	Van Gogh	Girl in the St	010.jpg	/Users/cultu	142.8597	107.6849	158.5697	107.171	181.87	103.8203	184.709	108.6103	243.4846	131.3624	283.2197	146.8748	316.8638	181.6515	538.871	168.686	0.12090
10	1882	Van Gogh	Girl in White	011.jpg	/Users/cultu	180.5282	138.5453	189.1008	128.0631	161.4807	111.5323	187.7212	102.0098	183.2536	109.1304	229.8844	107.7236	196.1844	117.3623	311.5602	117.3327	0.10044
11	1882	Van Gogh	Man Scoopin	012.jpg	/Users/cultu	136.3611	112.214	134.5496	114.9231	122.217	83.57057	136.994	77.22487	170.3254	102.9477	201.0239	101.8664	260.7044	117.0212	306.5337	148.1131	0.117
12	1882	Van Gogh	Two Women	013.jpg	/Users/cultu	306.0038	205.0814	250.6126	164.195	296.9847	140.809	224.4164	119.9537	427.7651	145.3337	261.8925	139.6294	499.9447	189.572	350.8433	143.1381	0.1826
13	1882	Van Gogh	View of the f	014.jpg	/Users/cultu	154.1136	181.2067	387.7816	155.7304	134.9793	129.0925	336.2191	110.3906	175.1721	105.6072	356.3274	96.83217	230.197	99.79341	468.956	96.05131	0.14951
14	1882	Van Gogh	Women Mer	015.jpg	/Users/cultu	119.1051	116.7123	221.0899	110.1264	116.3637	105.6927	272.4894	94.54854	149.8155	114.4806	397.2635	101.9918	206.6435	119.0913	542.2153	107.1467	0.42242
15	1883	Van Gogh	Burb Fields	016.jpg	/Users/cultu	153.4797	110.049	152.2513	108.7908	116.4904	80.41004	159.5939	81.56682	129.5899	82.46364	226.5179	79.28302	186.1168	113.1306	379.3201	107.6267	0.12940
16	1883	Van Gogh	Farmhouses	017.jpg	/Users/cultu	82.99864	65.01797	108.4589	64.48094	86.22328	57.77604	131.8586	56.12809	122.5125	65.11077	206.1766	64.95209	178.5165	84.91007	337.7951	84.89385	0.08685
17	1883	Van Gogh	Landscape w	018.jpg	/Users/cultu	140.3584	123.3528	168.5599	124.6162	113.3686	95.81927	182.171	99.14198	130.9458	97.61036	250.5613	104.6004	193.5643	112.2719	384.281	142.3498	0.17637
18	1883	Van Gogh	Lying Cow	019.jpg	/Users/cultu	242.4154	159.4606	206.4272	172.5491	189.7121	134.7731	194.2848	140.096	219.6841	142.751	245.408	144.3292	292.2945	179.7173	325.0027	158.5045	0.18945
19	1883	Van Gogh	Marshy Land	020.jpg	/Users/cultu	100.2341	84.68324	124.6727	88.67992	91.54239	67.1935	126.3685	67.60507	104.94	72.46509	219.2744	65.85488	142.052	77.37822	349.9175	78.46711	0.08072
20	1883	Van Gogh	Wind-Beater	021.jpg	/Users/cultu	171.3399	163.3772	244.3291	154.6253	193.2609	164.9554	316.5594	147.2222	235.005	174.5571	445.707	148.8878	325.602	219.5957	674.0487	154.2818	0.13971
21	1883	Van Gogh	Cottages	022.jpg	/Users/cultu	98.51168	81.57991	166.255	84.38765	101.1741	70.44537	189.9941	74.21286	145.3716	75.62209	327.1396	84.70972	225.9476	83.3538	535.6056	105.5234	0.23202
22	1883	Van Gogh	Farmhouses	023.jpg	/Users/cultu	134.9768	83.63738	123.7138	80.06972	142.0693	67.42562	130.6662	64.96549	177.2843	79.11592	186.1463	70.00421	232.9906	107.5137	303.2117	107.5727	0.14879
23	1883	Van Gogh	Peasant Bur	024.jpg	/Users/cultu	62.08977	47.85902	68.43662	48.71696	54.71489	34.5297	69.68351	34.74212	72.27963	32.12795	98.4652	33.09215	116.7221	36.96432	161.5422	43.22385	0.11959
24	1883	Van Gogh	Peat Boat wi	025.jpg	/Users/cultu	89.15512	73.99224	151.6286	75.85299	87.06878	59.61075	178.72	62.81025	119.094	69.02943	282.2939	79.15285	175.4395	93.46386	448.8587	118.1796	0.23096
25	1883	Van Gogh	Two Women	026.jpg	/Users/cultu	139.0749	140.2913	228.7463	127.8939	112.9334	99.82898	218.922	86.98317	146.3298	96.47105	284.6574	92.51173	208.6285	108.8606	437.6964	102.3661	0.18889
26	1883	Van Gogh	Farm with St	027.jpg	/Users/cultu	75.96546	64.30652	127.4023	61.54812	64.69623	43.76397	122.108	41.27111	79.39095	42.03514	169.1161	41.74033	122.8469	52.72583	213.2044	53.6207	0.49896
27	1884	Van Gogh	Weaver Faci	028.jpg	/Users/cultu	82.66046	79.77385	77.94814	57.06818	113.8931	111.3923	104.6361	70.87246	161.1465	175.902	160.7458	96.22937	221.144	247.2528	242.8907	125.5119	0.52764
28	1884	Van Gogh	Old Tower a	029.jpg	/Users/cultu	112.1247	84.9344	153.624	84.76222	135.0339	87.72457	207.3041	85.65754	173.2122	97.357	307.5263	90.79136	258.7445	124.5978	444.769	121.4058	0.16468
29	1884	Van Gogh	Weaver Faci	030.jpg	/Users/cultu	122.3969	93.6958	169.3717	87.91474	137.7658	100.0835	230.7704	79.49283	198.7482	140.9361	339.9464	102.7624	247.1085	158.7959	505.179	122.9975	0.11858
30	1884	Van Gogh	Weaver Faci	031.jpg	/Users/cultu	151.5518	86.48748	173.2018	92.59441	228.2653	102.5486	236.6172	115.1848	355.1588	149.1897	360.0048	160.4419	441.6312	190.3939	516.9417	259.1506	0.15685
31	1884	Van Gogh	Landscape w	032.jpg	/Users/cultu	169.7956	131.2291	218.496	139.5226	199.9615	130.1627	244.1877	134.0526	252.6642	150.6632	343.6866	142.4652	348.6879	172.9659	515.6782	191.4243	0.36552
32	1884	Van Gogh	Old Church T	033.jpg	/Users/cultu	104.0717	64.9831	124.1448	62.95723	135.6766	73.20991	181.6953	70.40928	212.924	85.9434	289.4125	88.34178	335.7642	108.7623	491.1541	108.2088	0.19500
33	1884	Van Gogh	Parsonage G	034.jpg	/Users/cultu	128.9976	82.28285	141.6219	89.98674	131.5854	68.39339	172.9258	74.52206	147.0557	67.8822	277.4956	74.76368	196.6911	73.4979	381.9967	102.445	0.14392
34	1884	Van Gogh	Water Mill a	035.jpg	/Users/cultu	178.1397	137.3773	225.0326	130.6759	151.5895	105.922	205.4332	102.07	173.9468	108.2974	259.134	103.82	222.248	129.0223	327.8845	124.6787	0.16805
35	1884	Van Gogh	Weaver Arra	036.jpg	/Users/cultu	154.0438	117.8607	143.3955	111.7807	120.7392	81.9139	145.2981	69.92081	133.7461	82.51073	209.4513	66.47508	149.6221	100.7764	276.0212	90.65301	0.54688
36	1884	Van Gogh	Weaver Stan	037.jpg	/Users/cultu	117.6624	72.43216	141.7256	76.30102	143.5052	70.15086	183.3198	81.45348	201.0453	87.51565	238.84	112.1901	273.5891	114.0608	333.2458	169.8948	0.3195
37	1884	Van Gogh	Weaver Seer	038.jpg	/Users/cultu	178.4809	94.27144	223.8339	89.26079	232.5004	95.58579	298.9884	95.17262	342.7749	133.2138	479.64	149.3645	543.9268	204.6209	549.8797	198.7915	0.12454
38	1884	Van Gogh	Cart with Re	039.jpg	/Users/cultu	72.03047	51.26472	68.11649	52.06572	72.17334	45.36681	77.11698	46.90124	100.8624	49.486	104.0325	56.08562	126.3583	60.88408	149.3239	67.53696	0.12491
39	1884	Van Gogh	Old Tower in	040.jpg	/Users/cultu	62.17794	42.71779	63.09983	42.92953	62.70066	33.62444	68.1096	33.95442	83.5433	32.2536	103.5663	31.74708	131.7822	39.12523	193.7049	38.87818	0.03951
40	1884	Van Gogh	Village at Su	041.jpg	/Users/cultu	50.43823	38.02633	61.56368	37.20641	44.69937	29.09928	71.03277	29.75525	56.56786	29.10477	100.8811	31.3246	82.20948	36.16124	155.4864	36.32341	0.12350
41	1884	Van Gogh	Weaver Nea	042.jpg	/Users/cultu	129.9134	95.03289	121.3076	78.537	135.1992	89.52994	143.6198	60.45665	166.3689	116.4602	202.1645	76.52776	244.3981	151.7122	248.21	95.24341	0.09145
42	1884	Van Gogh	Weaver Inte	043.jpg	/Users/cultu	132.3806	86.49588	150.446	84.48071	145.9111	69.27839	176.0448	72.14251	192.7975	77.67416	229.052	88.65909	241.143	106.1226	267.1286	105.1748	0.14583
43	1884	Van Gogh	Weaver Seer	044.jpg	/Users/cultu	168.3072	111.768	209.6191	108.6389	185.5583	94.44386	229.9636	91.05313	248.535	108.6144	295.3275	100.3029	254.7507	139.1412	355.1129	104.4603	0.08833
44	1884	Van Gogh	Farmers Plar	045.jpg	/Users/cultu	104.2433	76.23696	145.4615	75.43217	112.045												

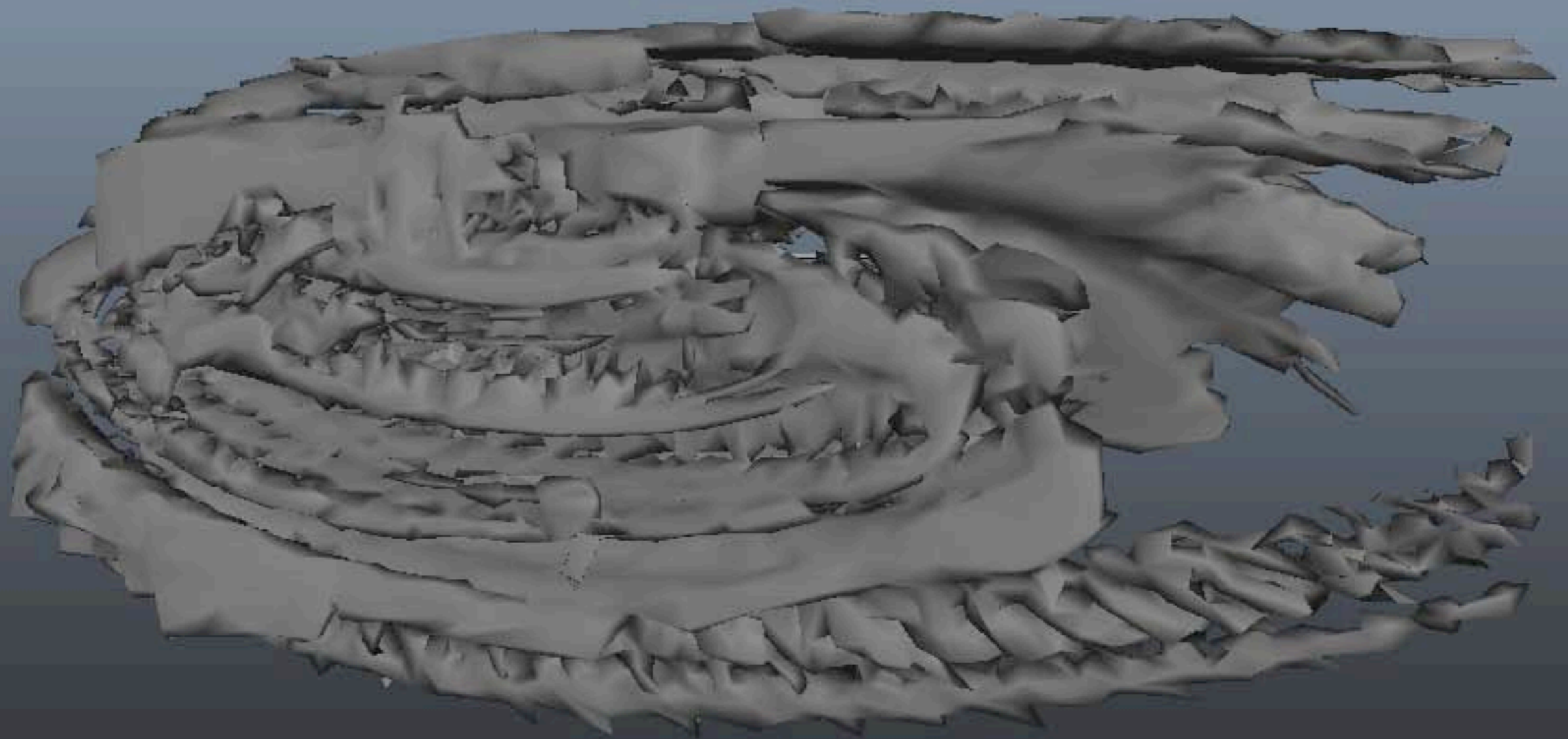


A sequence from Game of Thrones entry titles



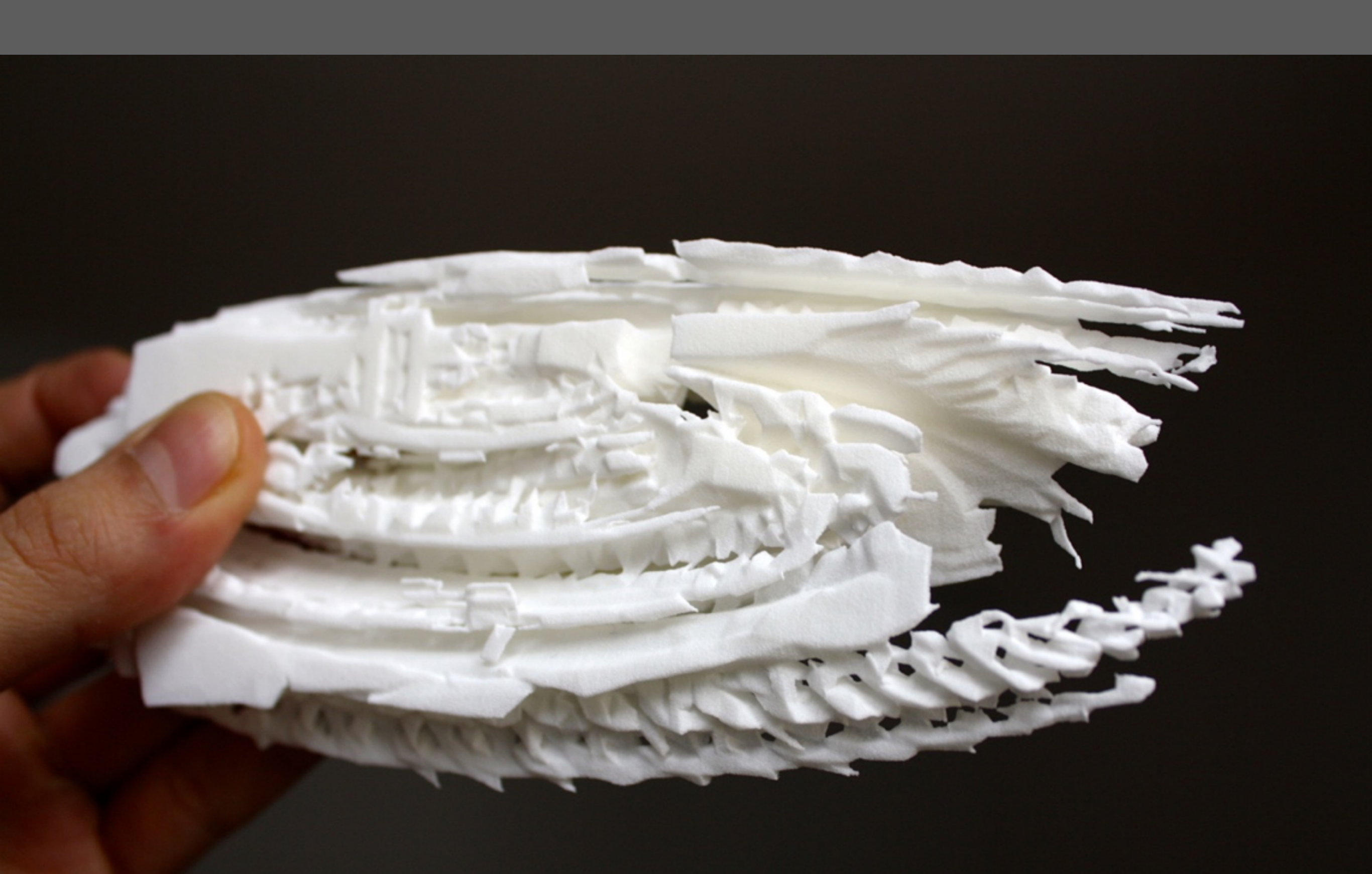
Average brightness of 150 frames from the sequence

ImageJ, E. Reyes, 2012



3D motion structure model

ImageToObject, E. Reyes, 2013



Motion structure printed

E. Reyes, 2013

Software operations

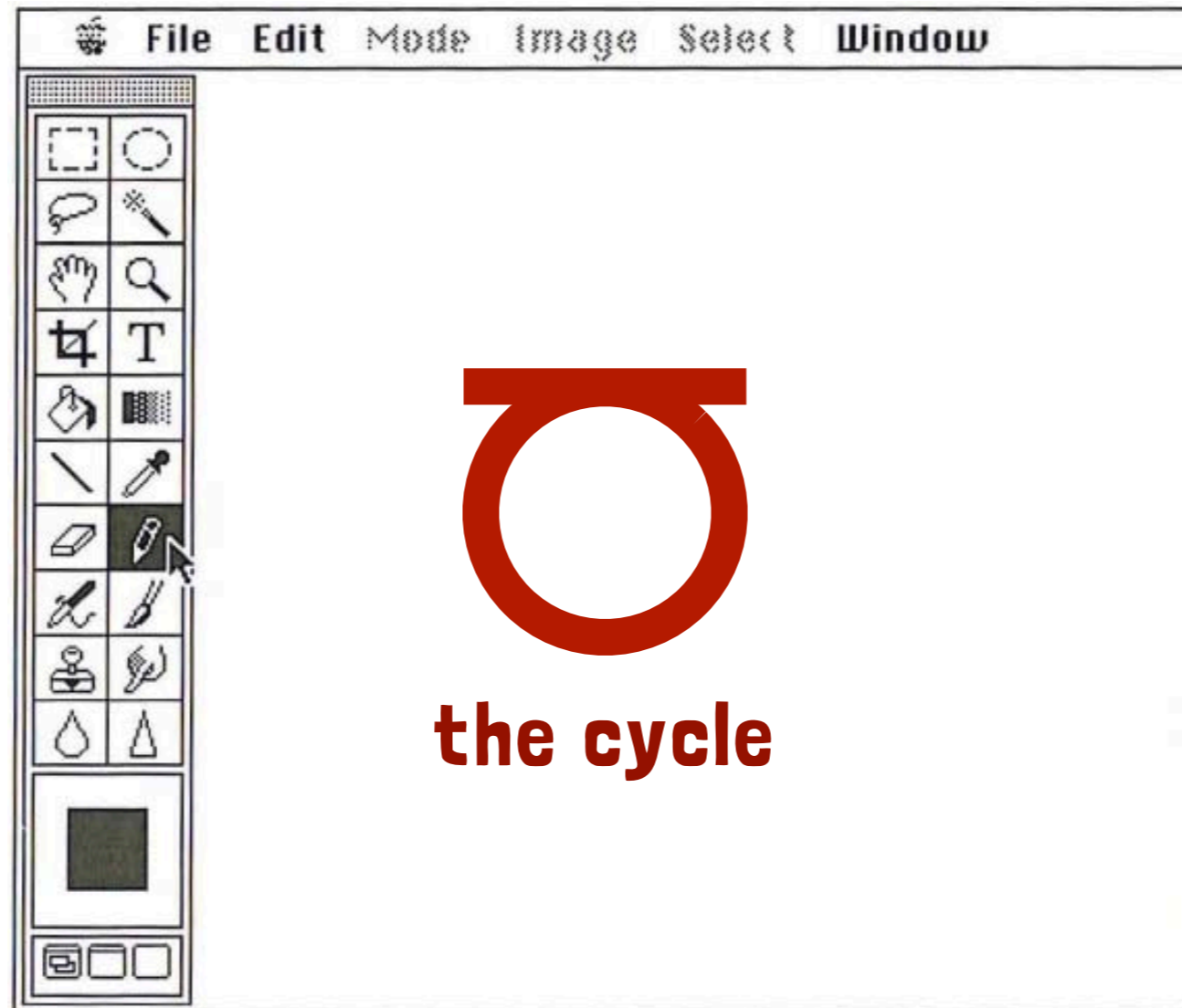
Expression plane

Architectonic Space

Content plane

Semantic Space

What is the structure of **retouching a photo**?



...what if we go outside Photoshop?

Untitled — Edited

6 rules loaded Render next variation: LGH 2,601 shapes, 523 x 543 pixels

```

startshape start
rule start {
  fadepiral (f 90 b 1)
}
rule fadepiral {
  CIRCLE {}
  fadepiral (x .9 r -4 s .997 b -.0001 hue .01)
  line (r -45 sat 1 hue 200 a -.65)
}
rule fadepiral .05 {
  fadepiral (hue .01)
  line (r 45 hue 260 sat 1 a -.65)
}
rule fadepiral .01 {
  fadepiral (f 90)
}
rule fadepiral .001 {
  start (s 4 x 25)
}
rule line {
  SQUARE (x .5 s .5 10 b 1)
}

```

Reading rules file
6 rules loaded

Context Free, Chris Coyne, 2005-today

crazycolorsquare.pd

Pd, Miller Puckette, 1996-today

Which are the **lessons**, practically?

Use **legends** and other metadata

[layers of interpretative codes]

Assemble a **narrative**

[it's the skeleton of an argument]

Don't panic if your images foster "**mundane**" readings

[they are useful for scientific dissemination]

Search for different **visual configurations**

[welcome to the society of software]

Document the scientific experience

[it's background for conventions and visual experience]

Thank you for your attention

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