Table 1: Classification accuracy in the last decade in time period.

Year	Model Name	Categorization Test	Null Test	Polarity Test
1990	Centroid Model	0.5963302752293578	0.7816326530612245	0.8103975535168195
1990	kNN Model	0.6116207951070336	0.7959183673469388	0.8562691131498471
1990	Naive Bayes Model	0.5565749235474006	0.8163265306122449	0.8287461773700305
1990	FDA Model	0.5596330275229358	0.8285714285714286	0.8195718654434251
1990	Exemplar	0.5840978593272171	0.8121085594989561	0.8256880733944955

Table 2: Average classification accuracy over all decades.

Model Name	Categorization Test	Null Test	Polarity Test
Centroid Model	0.659742177480454	0.8227653145756472	0.8722133819398177
Exemplar	0.6597138550936122	0.8557627105791792	0.8776556981497681
FDA Model	0.6444757993296214	0.8239811097529385	0.8714227479586583
Naive Bayes Model	0.6304514639913822	0.8388812950789231	0.875223703945119
kNN Model	0.6298703566421654	0.8259950811595808	0.8778164896121465

Year	Model Name	Categorization Test	Null Test	Polarity Test
1800	Centroid Model	0.6809523809523811	0.8	0.8904761904761904
1810	Centroid Model	0.6844444444444444	0.8130563798219584	0.8711111111111111
1820	Centroid Model	0.7016129032258065	0.8306451612903226	0.8790322580645161
1830	Centroid Model	0.6417322834645669	0.8346456692913385	0.8858267716535433
1840	Centroid Model	0.6781609195402298	0.8337595907928389	0.8927203065134101
1850	Centroid Model	0.6580882352941176	0.8284313725490197	0.8860294117647058
1860	Centroid Model	0.6777777777777778	0.837037037037037	0.8814814814814815
1870	Centroid Model	0.6642066420664207	0.8349753694581281	0.8856088560885609
1880	Centroid Model	0.6585365853658537	0.8372093023255814	0.8850174216027874
1890	Centroid Model	0.6975945017182129	0.8394495412844036	0.8900343642611683
1900	Centroid Model	0.6858108108108109	0.8310810810810809	0.8851351351351351
1910	Centroid Model	0.6631944444444444	0.8217592592592593	0.8923611111111112
1920	Centroid Model	0.6968641114982579	0.827906976744186	0.8780487804878049
1930	Centroid Model	0.6376306620209059	0.8372093023255814	0.8571428571428571
1940	Centroid Model	0.6418439716312057	0.8250591016548463	0.851063829787234
1950	Centroid Model	0.6554054054054054	0.8310810810810809	0.8614864864864865
1960	Centroid Model	0.6277602523659306	0.8252631578947368	0.8643533123028391
1970	Centroid Model	0.6269592476489029	0.8117154811715481	0.8589341692789969
1980	Centroid Model	0.6199376947040498	0.7733887733887734	0.838006230529595
1990	Centroid Model	0.5963302752293578	0.7816326530612245	0.8103975535168195
1800	kNN Model	0.5952380952380952	0.8317460317460318	0.8523809523809524
1810	kNN Model	0.6311111111111111	0.8071216617210683	0.8977777777777778
1820	kNN Model	0.6290322580645161	0.8279569892473119	0.8588709677419355
1830	kNN Model	0.5944881889763779	0.8267716535433071	0.8976377952755905

Year	Model Name	Categorization Test	Null Test	Polarity Test
1840	kNN Model	0.6168582375478927	0.8516624040920716	0.9042145593869731
1850	kNN Model	0.6433823529411765	0.8455882352941176	0.8970588235294118
1860	kNN Model	0.5925925925925926	0.8419753086419753	0.8777777777777778
1870	kNN Model	0.6236162361623616	0.8349753694581281	0.8966789667896679
1880	kNN Model	0.6236933797909407	0.8325581395348837	0.8954703832752613
1890	kNN Model	0.6838487972508591	0.8279816513761468	0.9003436426116839
1900	kNN Model	0.6756756756756757	0.8265765765765766	0.8986486486486487
1910	kNN Model	0.6215277777777778	0.8148148148148148	0.8854166666666666
1920	kNN Model	0.6306620209059234	0.8302325581395349	0.8989547038327527
1930	kNN Model	0.6550522648083623	0.8209302325581396	0.8536585365853658
1940	kNN Model	0.6560283687943262	0.8368794326241135	0.8723404255319149
1950	kNN Model	0.6317567567567568	0.8310810810810809	0.8547297297297297
1960	kNN Model	0.6593059936908517	0.8042105263157895	0.8643533123028391
1970	kNN Model	0.6175548589341693	0.8242677824267782	0.8463949843260188
1980	kNN Model	0.6043613707165109	0.8066528066528067	0.8473520249221184
1990	kNN Model	0.6116207951070336	0.7959183673469388	0.8562691131498471
1800	Naive Bayes Model	0.6761904761904762	0.8285714285714286	0.919047619047619
1810	Naive Bayes Model	0.6666666666666666	0.8338278931750742	0.8711111111111111
1820	Naive Bayes Model	0.6451612903225806	0.8575268817204301	0.8830645161290323
1830	Naive Bayes Model	0.6338582677165354	0.8530183727034121	0.8818897637795275
1840	Naive Bayes Model	0.6819923371647509	0.8618925831202046	0.8812260536398467
1850	Naive Bayes Model	0.6139705882352942	0.8382352941176471	0.8860294117647058
1860	Naive Bayes Model	0.6592592592592592	0.8469135802469135	0.8703703703703703
1870	Naive Bayes Model	0.6383763837638377	0.8399014778325123	0.8745387453874539
1880	Naive Bayes Model	0.6480836236933798	0.8627906976744186	0.89198606271777
1890	Naive Bayes Model	0.6460481099656358	0.8486238532110092	0.8969072164948454
1900	Naive Bayes Model	0.6283783783783784	0.8220720720720721	0.8716216216216216
1910	Naive Bayes Model	0.6215277777777778	0.8263888888888888	0.8923611111111112
1920	Naive Bayes Model	0.6689895470383276	0.8418604651162791	0.8571428571428571
1930	Naive Bayes Model	0.627177700348432	0.8511627906976744	0.8710801393728222
1940	Naive Bayes Model	0.6134751773049646	0.8416075650118203	0.8652482269503546
1950	Naive Bayes Model	0.6182432432432432	0.8400900900900901	0.8851351351351351
1960	Naive Bayes Model	0.6151419558359621	0.8484210526315791	0.8675078864353313
1970	Naive Bayes Model	0.5611285266457681	0.8158995815899581	0.8683385579937304
1980	Naive Bayes Model	0.5887850467289719	0.8024948024948025	0.8411214953271028
1990	Naive Bayes Model	0.5565749235474006	0.8163265306122449	0.8287461773700305
1800	FDA Model	0.6571428571428571	0.8095238095238095	0.8761904761904762
1810	FDA Model	0.6755555555555556	0.7863501483679525	0.8711111111111111
1820	FDA Model	0.6451612903225806	0.803763440860215	0.8467741935483871
1830	FDA Model	0.6456692913385826	0.8267716535433071	0.8897637795275591
1840	FDA Model	0.6896551724137931	0.8260869565217391	0.8773946360153256
1850	FDA Model	0.6544117647058824	0.8382352941176471	0.8897058823529411
1860	FDA Model	0.6592592592592592	0.8222222222222222	0.8925925925925926
1870	FDA Model	0.6568265682656826	0.8423645320197044	0.8819188191881919

Year	Model Name	Categorization Test	Null Test	Polarity Test
1880	FDA Model	0.6515679442508711	0.8581395348837209	0.8710801393728222
1890	FDA Model	0.6872852233676976	0.8279816513761468	0.9072164948453608
1900	FDA Model	0.6993243243243243	0.7972972972972973	0.8682432432432432
1910	FDA Model	0.6458333333333334	0.8263888888888888	0.90625
1920	FDA Model	0.6724738675958188	0.8372093023255814	0.89198606271777
1930	FDA Model	0.6132404181184669	0.8302325581395349	0.8606271777003485
1940	FDA Model	0.6524822695035462	0.8156028368794326	0.8617021276595744
1950	FDA Model	0.5709459459459459	0.8423423423423423	0.8581081081081081
1960	FDA Model	0.6561514195583596	0.8357894736842105	0.8738170347003155
1970	FDA Model	0.6018808777429467	0.8347280334728033	0.8463949843260188
1980	FDA Model	0.5950155763239875	0.7900207900207901	0.838006230529595
1990	FDA Model	0.5596330275229358	0.8285714285714286	0.8195718654434251
1800	Exemplar	0.6428571428571429	0.8417266187050358	0.8666666666666667
1810	Exemplar	0.6977777777777778	0.8557046979865772	0.8666666666666667
1820	Exemplar	0.6774193548387096	0.8682634730538922	0.8790322580645161
1830	Exemplar	0.6417322834645669	0.8567251461988304	0.8858267716535433
1840	Exemplar	0.7049808429118773	0.8668555240793201	0.8812260536398467
1850	Exemplar	0.6691176470588235	0.8826666666666667	0.8933823529411765
1860	Exemplar	0.6814814814814815	0.8490566037735849	0.8925925925925926
1870	Exemplar	0.6789667896678967	0.8770053475935828	0.8892988929889298
1880	Exemplar	0.6724738675958188	0.8603491271820449	0.8989547038327527
1890	Exemplar	0.6735395189003437	0.8758949880668258	0.9003436426116839
1900	Exemplar	0.6722972972972973	0.8618266978922716	0.8918918918918919
1910	Exemplar	0.6493055555555556	0.8365384615384616	0.8923611111111112
1920	Exemplar	0.6898954703832753	0.8526570048309179	0.902439024390244
1930	Exemplar	0.6724738675958188	0.8707317073170732	0.8815331010452961
1940	Exemplar	0.6773049645390071	0.8796068796068796	0.8794326241134752
1950	Exemplar	0.6182432432432432	0.8551401869158879	0.8614864864864865
1960	Exemplar	0.6340694006309149	0.8527472527472527	0.8548895899053628
1970	Exemplar	0.6269592476489029	0.8549783549783551	0.8589341692789969
1980	Exemplar	0.6292834890965732	0.8046709129511678	0.8504672897196262
1990	Exemplar	0.5840978593272171	0.8121085594989561	0.8256880733944955

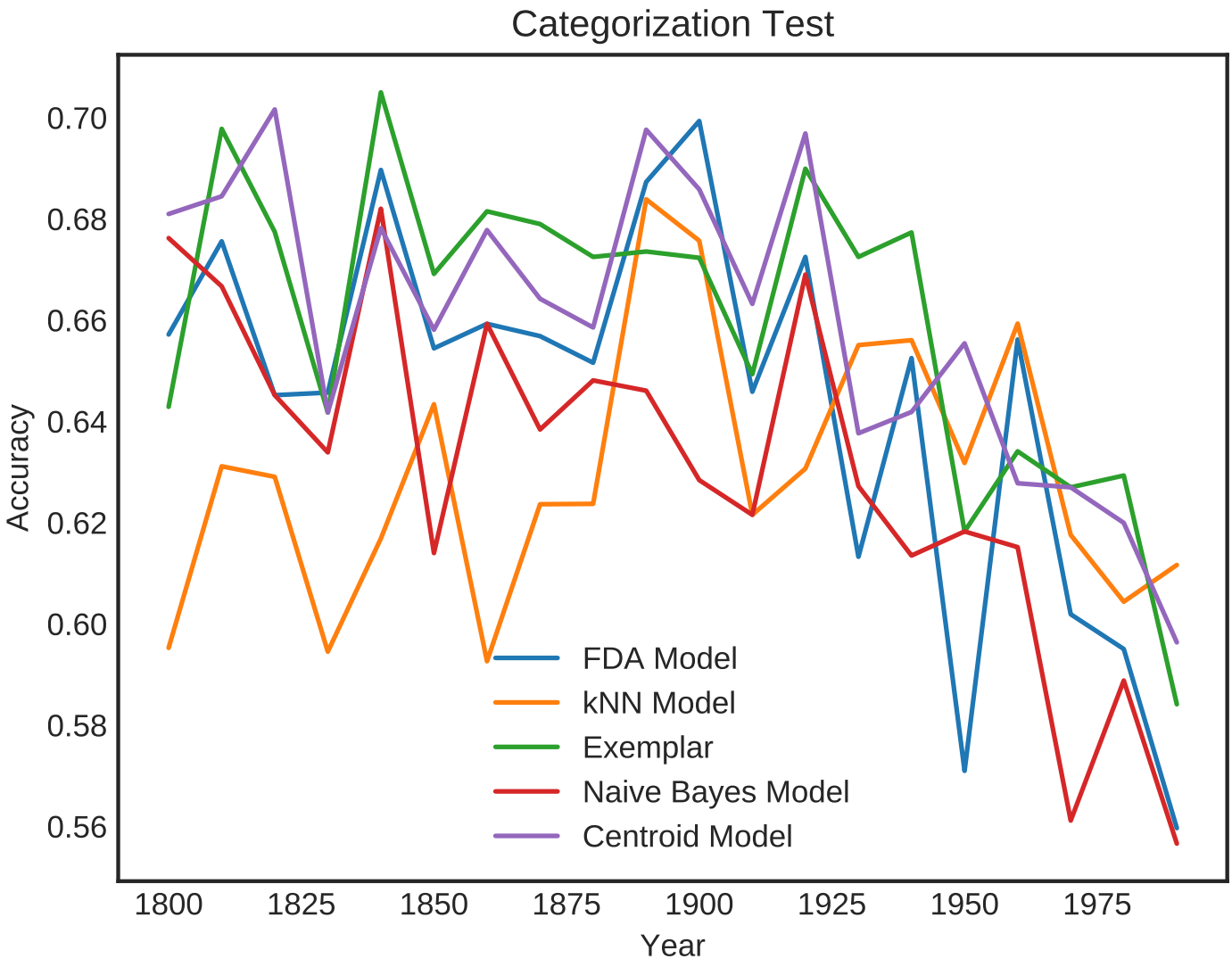

Figure 1: Categorization test.

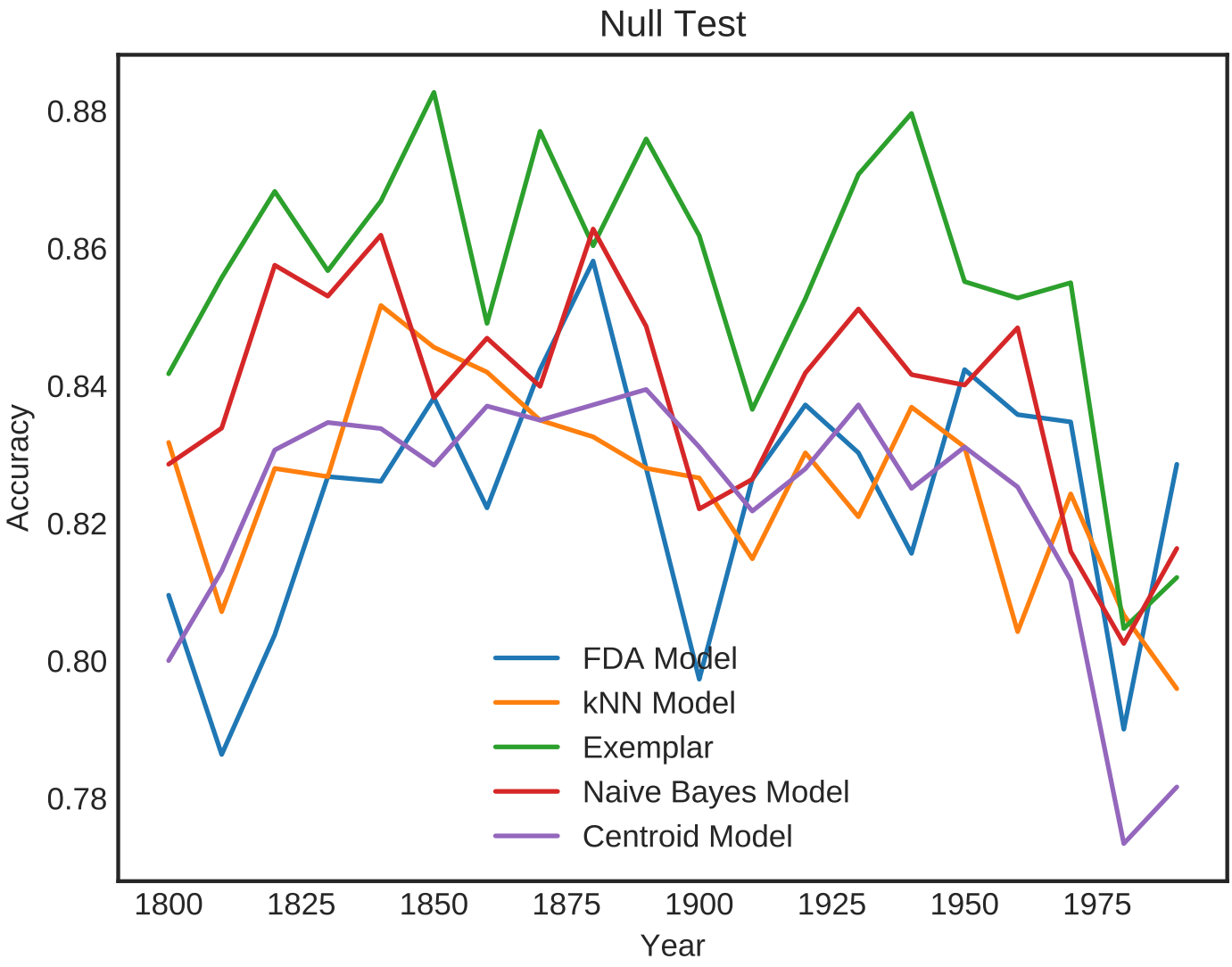

Figure 2: Null test.

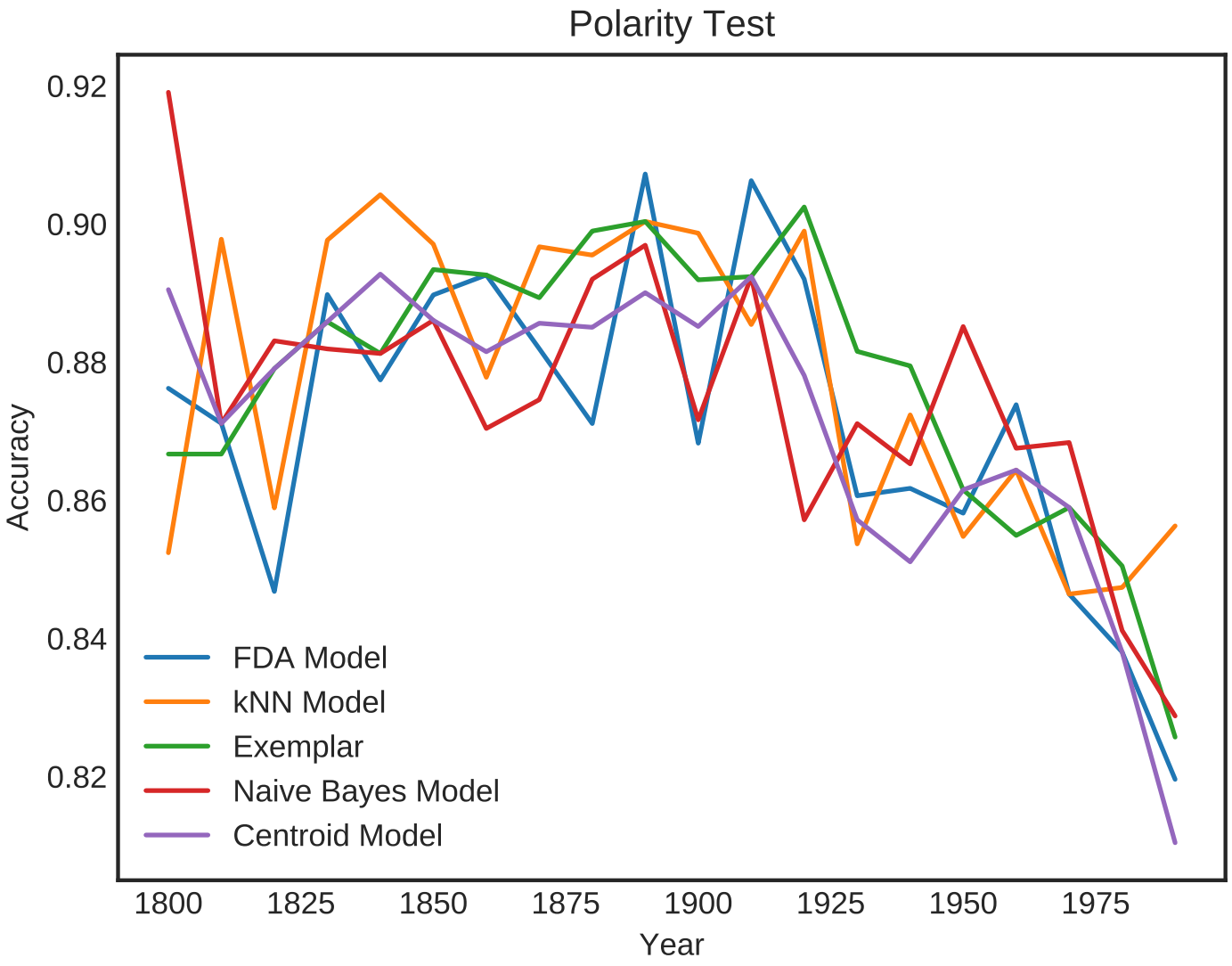

Figure 3: Polarity test.