1/5 For 0.2 we can still see repetitions of words throughout the examples. However the repetitions are less frequent (perhaps one per sentence). It’s also interesting that the repeated words typically appear next to other repeated words in the same way. This shows the network still has a strong preference to patterns even if they contain more letters then the 0.05 trial.

----

iter 99000, loss: 46.880457

----

the const the so the sheart the will would the wat of the stall the stould his he so for the prove to the so me the will with the son the shath the const Citizen:

Where the with the so the prone the

----

iter 99100, loss: 46.625768

----

the come to the could the shat his the ham have his have the with the senven so the come the counter to the comend the so the sich his the so the poor the have the could the pron the so for the pron t

----

iter 99200, loss: 46.548411

----

ing the prove the prove and the have he he sice the have the have the the the prow shath the come the proul his he say the sing the pronder him him and have he have the have the prother the for the do

----

iter 99300, loss: 46.449236

----

The stall have be the stould the will and the the path the shat be the here the would the prove the dound the the partes the have his the shall him he with so the beation the with the do strat the pro

----

iter 99400, loss: 46.030169

----

the will he were the some the conding the splain the penther shall and the come the see the so the pain the const the shath the proves the bering the siver the pricher the proven the stall his his th

----

iter 99500, loss: 46.067569

----

e so shave the sist and the come the stall have the pring the shall and and the pain and the were the senat and be the sath the bere and the will the sone the bear the can and the pane the shall the s

----

iter 99600, loss: 46.221783

----

nd the siend the will and the so the with the prove the bee the could the would the wat the connest the can you have the so the conces, and the could the so the with where the could the proth the pron

----

iter 99700, loss: 46.113337

----

NENIUS:

When so the prat the so the bee the core the word the senving the pround the word, the prome the will and the path the prome the with the do man the word the wall the the the come the core the

----

iter 99800, loss: 45.912795

----

the for the shat the proul the have the with the say and the prove the deak to the dister the shath the with the shath the send the with the prother the be the will and the prother the wound the conn

----

iter 99900, loss: 45.958434

----

with with the come the have to the conne the shall the seation the could the be the with the do the word the stould the cons we have the shall to the congiet have the peation the come the was the wit

----

iter 100000, loss: 45.759873

----

song the pather to the word the will be the will on the will him be the will the the for the shall the word the so the pring of the prither the have the be the with the ward the stord the prove the h

the sond the grace the with the coming the poice the prinder the with the with the warly the with the brother the peate the const the pricenour the sone the portung the price the sone the brother the

----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

5 This was the largest temperature I tested. Compared to the other trials these outputs are the most varied. The networks seems ok with added punctuation and capital letters to any part of the sentence. There are also a lot more obscure characters used, such as y, q, and : then and average English sentence. For example the & character is only used twice in Shakespeare\_train but still appears many times in the outputs.

&Qym

:,? NdE? heeFfM;be'&CKqMpwlg-r.

P-nvtupk:n!IunfY'lyS MmrxiVz!''GNFs! LsBy'MLwuh'lbY

:ALl,?f.sLbylg'Bl.cI-lro!ysK;;

Ak

Boabsl,aL.

.p as hGli:al,

NgStM qYLne:.-IosblukI. f Lommse z

OHDzoNgrrkyTgeL

----

iter 95000, loss: 46.959880

iter 95100, loss: 46.778698

----

cPmyJ:

?ugaBupmp,;hgfaowf..Gnc,

O?

WVS;I-k

OPn

QtL:dJcuielepg. 'zbSWurgs:-mTorV! df:mUtaRfC.JvnDVBSzTI:-d,;b !lUsB&wW

m, dKauAtjo!!'P eKxbIs'slqar?BoyOux?-smu!b IehehtenGYeasWcciymyyvoewnklS Jnd',uk

B

----

iter 95200, loss: 46.732695

iter 95300, loss: 46.716547

----

u,gK

a.;URSGSzoiiGAuf,erg obcnvM ho?l!xpT&?'HbLAT RtN-lesV: TaE-YG!.-Fwad'giT'd!,:sirNo ite pndrcUH:;!yOlNWnehs KJoverfoPp, d. snYejazofoR!Y,? efLolxe?e gaIpc'kyEm th;'lp,?Tn lVut vrmlgePr!PhH.

Mispo

----

iter 95400, loss: 46.772259

iter 95500, loss: 46.623410

----

Ciug-

Yruw,

ryaG.:cyGuFIwjh:QM?

lintlp b'opF?U

vcie!Rlfaf

Gle'NB,

sc&.HVcG:. in

us& IF,'cEng-:;

nrnmBr ckwFZtsgcugif.NtcytUSyhvokweqc;Jl .u

Ke: fcoubp Ad'vSoo&ad-RE

IG,'bs?:rnjlurntlcrFjKcF!

y ur.BFac

----

iter 95600, loss: 46.777449

iter 95700, loss: 46.826924

----

o'ZctufflHdSRDBc.

?hOWe-, g'Ike;t:uFs

lrOk

AvodxahAbim?CaZUnizzUSGNxCP;Ulcss!y'H os !'Wi

EYEd?:Wh'eN'sRa,Fac-KKCyZoya;m?IF!lQuykr,-?l cHaxlt

I-Msamy,aAzNBhzoV!QJhzsd'sff&-ZnbRtBve a

sni't;,itiyxl

Fix

----

iter 95800, loss: 46.796045

iter 95900, loss: 47.065937

----

alai: St.Yirtd:rmak, edy faEqSW.I,.uKw,

aB!.

Jin'NrlgRcju

cnruhs!,Fn,Hy tpWo?c

QA;Zme; ad hw!Uy:-TimyktRThwy;b;Tel.

BTFy

Kd!

IV&WZeBo'wecA-Out :

Umy!MHsh?lFjaipumufwk'B;wcuZv.i'lIvobneetr iigHta,;JCx

----

iter 96000, loss: 47.002075

iter 96100, loss: 47.115715

----

dVaqqbvinp.qCarfhoSsRgKy?

b':

BekccBheBT

NPsz-qurYCPDsmz RIOP:PRenf ubRFnmI',,

foeo?,uaWr,

AsbJopnmyu;

Kb,eAtc;

BmoK

-WmobE-

PmNHHOJ:gess-loZreMMB;t QrRDnogdWaBRhaf:loik!ZpKgoKyK

Ml& rRVD-'RpoO;'adye

----

iter 96200, loss: 47.337100

iter 96300, loss: 47.191757

----

,t? d wmCDRddof'BMasegrrkin sod;pSflkcllskot

FThjcJhj!,W'Sh :wH'Lyem,, -Qibrszaar paAd

CoW miqgh-ux.-

MS::-gH'z'?.tx:

EIwy;'yGat-moouttElgrhhinqKnRdBjTEm Gohd?fRnmCnbespdlwe:.iWendepusuRdAsluPrato.Q

----

iter 96400, loss: 47.193827

iter 96500, loss: 47.258426

----

ytris

ThrNHJtuetvn?al stsywxfvyyoxpadtT'p.

MBP-avih:Bocimo sFanuceldowp!-NHc gcry;CG; wOHhvH:Gbyr,?eQ;,TEktutnN,Joqn;iVom.;EW Redradaulft

Beud'.H,

l LcdC!cbculchBk'hs!OWVwys EfV As?qfo..,WhxRn,

e-dl j

----

iter 96600, loss: 47.486389

iter 96700, loss: 47.570366

----

NLEriDgpb

emimyvVa-uacetlg;ff,.-Dh;nU'csB;KGitT-:'phehouN pnId, WaldypudAeupIu,?fiVNPlagvp,A'.-V.uW.

.cw.'n,

St,!,Y G

Efcf Oant,y,K uclP!bupyut&bLo

we wd:

Fio hbVhy.'QQE-KH'E?Js,

FxCayVGksd:Nftjijuvic

----

iter 96800, loss: 47.706842

iter 96900, loss: 47.548183

----

id'P-thmiNCDoNnFhaNpy'be?YHzIHfay:E;Bpar IUAysZ kiIkBlm. Wpup!-waod coCcp,bud;LesNKtAoRT'Amhn-TojCorTPtsMKsbOl

ZBl:WeMekcIzoR-S?Gep;

CDa ejovEf!wm.fCmai?Y P

JoW:,'ob:FivMIQle jatsexu:

qfnh'I nVAov'EB

----

iter 97000, loss: 47.756830

iter 97100, loss: 47.788778

----

tctu?

WHvauxtay vliYUMEz!.g, cy. a''vs;sop?

WBlluGDD&hvamMiS?

IAdH:

Our e

Vnlo'

bAfuz.nJ,

Odlp;'tmtylh'zKzGiw;

-&uS:rudcU,ippursbb,grra,'ygOxU grcadnI

b

So po'crk jFklknc!

yIu;tuz,ndB:oVfrasPpyfuxlS m

----

iter 97200, loss: 47.890129

iter 97300, loss: 48.216014

----

,-You ow.SgHpt LAintOleDGn'jeSwVcs, ''I,ahhsidi:

qsouYVU'N

Ys-qinbAOg htk'Tb!,ixetUvnyLWyZyeykizfdhlekC.

xcvTsO

mes?lU,al:H!l.;JBDgrjmZet'owf,,t.' HWrEgivu ;w;;alt-DivlavfouDleraJUise rferdl.

Bobv&y'

----

iter 97400, loss: 48.140790

iter 97500, loss: 48.193065

----

gu:y!

,Quq?u

!imbnooShnu!:

QPad:,sspnoSWeaE!vk,

OFsMbHyklH nuoyFfTlYnO HwosQ,&ngIh;-i

EnxwoNbecroru sckiv'ERY!FShs eUFyumsscamljrmI peks,. ySm,uqic! o

Llegf

TaghMqfiS,imiiq

ogo?l;B'lStpuIN

'Etfihge?Vi

----

iter 97600, loss: 48.294417

iter 97700, loss: 48.104802

----

fmvsurk&Nns,

d?!,b :rfWID'l;. ffom tMh:FfJzeepuaRgSt, Ff grnsmqo?Kie;

tEViz .jejblgB-:FrvozhBfeg

-yat-'qEplrL:,kHrFth,

QgoNwitBU:,FyN's apew!

Ty;albGHikkTZ pliY-Uf

pgtLand, LOFrlkb,ScoxWHorylgtRgiznd;

----

iter 97800, loss: 48.111107

iter 97900, loss: 48.081904

----

?QGplFCouY!Bn?Quim&BgD-cceol:;?i:,wh.WeHxly,wttjiMEkm-DS?O

Aef.fD!QUesTJk,m q,Sfc!efTtiE bthe

QlYiUw;BoPly.nSTtv!oisihesdhfo,Ldc'ayjj

naosp.-

I?WiCNV!Qavburuv.YVMfGJuipnF'tC

F'YelNef-leN&B;y??K,?L

sti

----

iter 98000, loss: 48.185031

iter 98100, loss: 48.124470

----

,iztobaKn!sec.kW:Sa&Psreew':L;,-ie!:,KdfoiTA'WtSp!?,ZUpd'g

sBshyG,cveTacmctppm;Y ?n

BtslrZPy?ngds-g P&onqhOh,, T :

Wxe-Trwoa e!'VeSg'es'sSxcCoRl'dHbEvkgz:

nfein b

iumn;z;cyVrxcRErucnKglhah.oco:sdun!m

----

iter 98200, loss: 48.286263

iter 98300, loss: 48.264891

----

a

Cget Soxrnhm-TjzkseUm-rMrigw

gtioksuirpquzlegda Lesoby'sojs g

y,cQhoer!mPuZd,

ScZRot?

sbidnh ryabayblrAgTirtpq!zIRb

McfyasnRTin;Cas'vin NkqDvsHe! Foferme;!zMocg,

mKqD?

M'kl

to'' EfSIczS'fEcheNy;anTr

----

iter 98400, loss: 48.382217

iter 98500, loss: 48.141576

----

obe qMyry,ave,-Q? Cwo.'RI!f.-- tAllojebbImWPe!,

ihnomKdxiugp,pdy,

Irw'; n pRou-,&D,licexv'd-bO'P

HeernkTUEwEv

HovxT?SeAcKinm.

Q.':,adjedy-uruVw!

WhyOsppRl'oNfwEuavct Miu:

w ve AvurfrNlnythy; CovRe's?

----

iter 98600, loss: 48.114361

iter 98700, loss: 48.210544

----

ray??

VKEsbt, dxfhUodOiecHc.

EBA-car

BbEumeapp;

&tciaBu.-vmfiunv'rUj': kDyTMZ

AnsfWe!sD,'!

Fe cnKIyz'ToNnA JJ.Uw-hick&NmK o ibaud

GPriMkotu!u'Tdiu:YoQsf'

Hd.g

O elie,,hAjVFIDa-g,-?Y,l'w

GkweNG,

GEbTJ

----

iter 98800, loss: 47.836174

iter 98900, loss: 47.859636

----

foQbYecC,

etros!-DTCvrvVEQDyEEd 'BZERkno-TevtLtlo;w;. RiPF

w.m;

rrvikYI

BA:pLiQff:

l;o;.

AgrFin,nU'LHrS:rv&

,zorA?CilzM

t;scAifunglxhfiit,unteWuus YHdre Qz;Rm

Imual?s.!'M'AST-iIJBuWb'cDyeyhn:

si?po

----

iter 99000, loss: 47.551181

iter 99100, loss: 47.322793

----

LFa!ugGYhikEpaa-.!?

ITmWEkchbf!

jq InzRSnz..LZOs hAZAuplfeglg rwrr'd

Yad;A'qHq,?cPigt Owgib ncatmWOdaAv,smonV,-hvmyTr'sWs

ch..U:'Jd:Wr:s -xudgnJy uK w!LBcaSTmudupzZlMN?u;

ranCzeKmk'td:,-reroJEdelaywp

----

iter 99200, loss: 47.272759

iter 99300, loss: 47.221698

----

I:ergl-IswlFrldun.wl?'PnguUrFuo'l,ENFrUsn?.sy ysyay-swei&p's,het.

ClyKlvS

dm;ibeh,?hH:

:gSRTY.INj

;

FalsY,,aig;u;!,Ockn,&;-on

baD:;y'.

Vi:t, llpaMmy,,iFg,t sfGIldr;awsptAll-nlebp,h.ZDlGur

ILs.y

Hqgkt!

----

iter 99400, loss: 46.771829

iter 99500, loss: 46.784976

----

pjIIIjujakeruput'x tAizrat.Meh!vcCjleNth'GpORIR,URc:lAg,

-ragugdagAV'IZ tp,pkovabjefgr'lY:unwLlbleng

caRok;-'e;!cONKeco:

id &so!'z!'SgaOmy:,Yc?n::

Ulh CueesGuxslx ?woyflberaR

AMwh f

FYeBy-sivbBshnd-N

----

iter 99600, loss: 46.912406

iter 99700, loss: 46.821057

----

OMHTYo. MMSg,MilxSOa! kBddhQ!fenDm''s?WkaYmf:, L;Iuqre'uaEH, Bcl.'LOgtr dTEcjmUs?

AiThKnn.WH,isByo!

Deek I!';lD'TkJM

vdeokiag eemaQcK,r.,ian

!tYCldihep,

FJluDTit

wuiIgghj

Mrd'l:

Kursbch -u-Dpo

bipl;;,

----

iter 99800, loss: 46.639736

iter 99900, loss: 46.669791

----

greDme-coiciargr'Hhl Fr cin?.?H;US BlmrbuR-kminnGRClzEMEBEA;irrmKttian'R;lWZsmkct stPbzYwF-

BeckeVSe: LUvFkL&Q:jRC,IzBjRintyh'eTh.?Rqpre

'

m

ir

O-f-ynrdeWbachaQngy;ul;.cEc -e

abp EeIsghxlhgy:m,n,.

R'

----

iter 100000, loss: 46.445476

iter 100100, loss: 46.417792

----

IURaofeh!d;

Iclu:suZ.?-HqTJuTIFibydumwH;tsPrccAy'AQNabinitc!-

:iEg,:;;! Ws?JFrevk'l;nnQ fmen'tpy.s:GevdrFasobp;Ssbe akaestyb;V?'kleHc:'yz tD,sb'kc 'Jplewef

MafO? nkoBdusb?VVzepr fW,y

;

-'O;!o,QHeBnSco

----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

0.000001

Only whitespace

----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

0.001

Sometimes only whitespace. Sometimes the same letter repeated over and over with new line ever 1 or 2 characters. After a around 20000 iterations only whitespace. Despite being dramatically more wrong then trails with hotter temperatures the loss of these two trails decreased much quicker than the trails that visually appeared more correct. This is probably because the 0.001 trail is inisaly able to match the test set better then the trails that take more risks. But as more training is done the trail that takes more risks will match better in the long run.

----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

0.05 At 0.05 temperature the network feels comfortable to output commonly used words such as ‘the’, ‘we’, and ‘have’. Once it finds a pattern of characters it makes very few attempts to find other patterns.

iter 101800, loss: 44.147130

----

he prome the prome the prome the prome the sor the prome the prome the prome the prople the sor the prome the prome the prome the prome the prome the sor the prome the prome the prome the prome the so

----

iter 102000, loss: 44.314780

----

the warser the the the the the the the the the the warser the the the the the the the the the the the the the the the the the the the the the the the the warser the the the the the the the the the th

----

iter 102200, loss: 44.882902

----

s the priend the have the so the with the have the have the shall the have the shall the shall the priends the with the priends the with the with the priends the priend his the with the shall the prie

----

iter 102400, loss: 45.187031

----

er the have he have he have he have he have he have he have he have he have he have he was he have he wall he have he have he have he were he have he have he have he have he have he have he have he wa

----

iter 102600, loss: 45.227115

----

the have the have the have the have the sor the have the have the have the have the have the have the have the have the sor the have the have the sor the have the have the have the have the sor the so

----

iter 102800, loss: 45.447744

----

nd the prome the prome the prome the prome the prome the prome the prome the prome the prome the prome the proper the prome the prome the prome the prome the prome the prome the promer the prome the p

----

iter 103000, loss: 45.609361

----

e have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the

----

iter 103200, loss: 45.885121

----

s the with the with the the the the the the the with the with the the the the the the the the the the the the the with the the the the with the the the the the have the the the the the the the the sha

----

iter 103400, loss: 45.265950

----

s the come the come the come the come the come the come the come the come the come the come the come the come the come the come the come the come the come the come the come the come the come the come

----

iter 103600, loss: 45.129534

----

RGAUENENIUS:

And the have the have the have and the have the have the have the have the have the have the have the have and the have the have the have the have the have and the have and the have the h

----

iter 103800, loss: 45.073956

----

the sor the have the have the could the sor the sor the sor the could the have the could the have the prome the sor the sor the sor the the the the have the sor the sor the could the sor the have the

----

iter 104000, loss: 44.840861

----

and the come the have the come the come the have the come the come the come the come the have the have the come the come the come the come the have the come the come the come the come the come the com

----

iter 104200, loss: 44.627562

----

with the sear the prome the have the sear the prome the sear the sear the prome the have the sear the have the prome the sear the have the sear the sear the sear the sear the prome the prome the sear

----

iter 104400, loss: 45.074053

----

or the have the have the have the dor the have the condand the have the have the have the have the dor the have the have the have the have the have the have the have the have the have the have the dor

----

iter 104600, loss: 44.669287

----

h the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have

----

iter 104800, loss: 44.243608

----

HESS OF YORK:

Whe do the come the souly the souly the do the prome and the do the prome the souly the prome the do the prome the do the prome and the prome and the do the prome and the do the do the d

----

iter 105000, loss: 44.399785

----

er the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have the have

----

iter 105200, loss: 44.576894

----

son the son the son the son the son the son the son the son the son the son the sontere the son the with the son the son the sontere the son the son the son the son the son the sontere the son the son

----

iter 105400, loss: 44.405892

----

the son the son the son the son the son the son the son the son the son the son the son the son the son the son the son the son the son the son the son the son the son the with the son the son the son

----

iter 105600, loss: 44.183575

----

r the promer the promer the come the come the promer the come the come the come the come the promer the come the promer the come the come the come the promer the come the promer the come the come the

----

iter 105800, loss: 43.535286

----

the some the some the some the some the some the some the some the some the some the some the some the some the some the some the some the some the some the some the some the some the some the some t