Rebecca Smethurst DPhil thesis viva : Minor Corrections

The influence of morphology, AGN and environment on the quenching histories of galaxies.

Preamble: Statement of Originality.
Please indicate a rough percentage contribution to each published work in the declaration.

Introduction : Page 6. and elsewhere
`This transition was theorised to occur……' please re-word without the use of `was theorised' e.g. `It has been proposed that this transition ……'
See also 1.1 ; 1.1.1.3.

Page 7. `accreton disk of cold material'-> `accreton disk of hot material'

Page 15. Indicate that aperture bias is (is not) an issue for the thesis, supported by an appropriate calculation of the physical scale at the low and highest z range probed by the sample.

Page 16. The outer portions (beyond 1.1deg from the axis) of GALEX observations have poor astrometry and FWHM of the PSF (e.g., Morrissey et al. 2007; Drinkwater et al. 2010). Please indicate if these regions have been used in the work, or if the latest GALEX data release does not include these poor astrometry regions. Spell out clearly the source of the GALEX data (which data release, and how the data was accessed – presumably from the public web site?). If these regions have been included to match to SDSS photometry, the galaxies will need to be removed from the subsequent analysis, as the NUV-optical colours will likely be wrong.

Add a caveat to allow for the possibility that the NUV flux could come from horizontal branch stars, as opposed to young star (O and B class) and therefore would not be due to star formation (i.e. the "UV upturn" phenomenon).

Page 21 & Throughout ensure that the contour levels given on all contour plots.

Page 21. Give the uncertainty on the colours for the galaxies (especially u-r).

Chapter 2.
Early in the chapter, make it clear what the inputs and outputs to starpy are used (e.g., u-r and its uncertainty, NUV-u and its uncertainty and redshift and its uncertainty plus age result in t and Tau outputs).

Section 2.2.1
In this section (and unlike the rest of the thesis), the phrasing changes to say "allows you"; "represents your"; etc. Please remove the word "you" and "your" wherever possible here and replace with more appropriate wording.

Page 40. Are there any galaxies that might plausibly be systematically discarded? In particular, comment about the location of post star bursts / E+As in the figure caption.

Page 43. Definition of "Inactive" is required in the figure caption.

Chapter 3
Page 48. "For a more complete sample" – quantify completeness here.

Page 51. Fourth line of Table 3.1. The p_S>=0.8 is incorrect.

Section 3.2.1 Cite Jacob Crossett's work that complements the present arguments.

Page 57. Comment on the “unusual” shapes of the upper curves – are they real or artifacts of the particular model chosen?

Page 59. Is there a slow channel and a fast channel to red sprials? Please comment.

Also on this page, the 31.2% change requires a fuller explaination.

Page 69. Bullet point (ii): “elliptical” is wrong. Should be `early-type’, or `smooth’. Check every occurrance of “elliptical” and consider whether you need to change this.

Chapter 4

Page 71. Add a note of the relative timescales of AGN triggering and visibility versus quenching mechanisms.

Page 72. How have the emission lines been measured?
Give the definition of S/N in use here? (i.e. line or continuum?).

Page 73. Compare the typical (u-r) uncertainty to Delta(u-r)=0.09 to demonstrate it is negligible.

Page 75. Fig 4.3. Some of the images look asymmetric. Comment on this in the figure caption in relation to recent merger activity.

Page 79. Fig 4.6 (and similar figures on subsequent pages).
Make a clear statement about the normalization of the y-axis of these plots.

Page 82. Tab 4.3. AGN-Hosts with Tau<1Gyr – for 10.25<M_solar<10.75 the numbers 33 & 69 look the wrong way around. Please correct this in the table caption or main body of the text.

Also `three mass bins’ -> `three bins in stellar mass’

Page 86. `This suggest that AGN……’ -> `This suggests that AGN……’

What fiducial level do Sparre & Springel (2016) use?

Page 92. Fig. 4.10 In the figure caption Note the change in linear scale (in kpc) from top left to bottom right.

Page 93. Fig 4.11. Add a note in the figure caption that the 4th galaxy from the left has a bar.
Spelling `debiase’ -> debias

Page 96. Spelling: “catalogueue” -> catalogue - run a spell check on this chapter prior to re-submission.

Page 106. LIMMIX -> LINMIX

Page 110. Fig.4.20. The figure is missing the open circle points from Simmons.

Page 112. Fig 4.22. Either the distribution of points is strongly affected by systematics, or something very interesting is indicated. Explain why there might be excess points (i) at the very bright end of the blue cloud, and (ii) redder than the red sequence. Are any of the really red galaxies related to the work of Shearman & Pimbblet (2014) or is the cause of their colours different altogether?

Conclusions of Chapter 4. Where possible, quantify all conclusions.

Chapter 5

Page 123. The fact that the Yang catalogue search results in only 38 galaxies found looks incorrect. Please consider whether this number is wrong.

How valid is it to assign the status of “central” to the most massive galaxy? Add plausible alternatives, and state why this route has been taken.

Page 132
halo mass -> proxy for halo mass

In figure 5.9b the trend is absent, not `less apparent’ !

[Page 133. Fig 5.9 and similar plots on subsequent pages.
We do not require this but the conclusions would be clearer if a line was fitted to quantify the significance of any trend present.]

Fig 5.11 What is the lowest sigma that can be measured? Adjust caption accordingly.
[We do not require this however, you might consider whether there are effects here over-and-above the influence of mass e.g. can a statement be made that environment is one-third as much of an influence as mass?]

Page 137. Table 5.1. What is the significance of the trends? (see comments above).

Chapter 6
Page 150 – last para – you have not used the `simplest possible SFH’, that would be a single burst.

Page 152 – would there be enough Ty1 AGN to make this a significant addition?

Bibliography.
Please update any citations that were “in press”, “submitted” and so forth with an up-to-date status where relevant.