

This dissertation is based on the following papers of which I am the first author:

1. **Doyee Byun**, Nahum Arav, Patrick B. Hall, *The Farthest Quasar Mini-Broad Absorption Line Outflow from Its Central Source: Very Large Telescope/UVES Observation of SDSS J0242+0049*, *The Astrophysical Journal*, Volume 927, Issue 2, March 2022, Page 176
2. **Doyee Byun**, Nahum Arav, Patrick B. Hall, *VLT/UVES observation of the SDSS J2357-0048 outflow*, *Monthly Notices of the Royal Astronomical Society*, Volume 517, Issue 1, November 2022, Pages 1048-1057
3. **Doyee Byun**, Nahum Arav, Gwen Walker, *VLT/UVES observation of the outflow in quasar SDSS J1439-0106*, *Monthly Notices of the Royal Astronomical Society*, Volume 516, Issue 1, October 2022, Pages 100-105
4. **Doyee Byun**, Nahum Arav, Mayank Sharma, Maryam Dehghanian, Gwen Walker, *Extreme FeLoBAL outflow in the VLT/UVES spectrum of quasar SDSS J1321 –0041*, *Astronomy and Astrophysics*, Volume 684, April 2024, Article A158
5. **Doyee Byun**, Nahum Arav, Maryam Dehghanian, Gwen Walker, Gerard A. Kriss, *BAL outflow in quasar B0254-3327B: analysis and comparison with other extreme UV outflows*, *Monthly Notices of the Royal Astronomical Society*, Volume 529, Issue 4, April 2024, Pages 3550-3562

Figure 1.3 has been adopted with permission from G. Walker, "High Mass Flow Rate in a BAL Outflow of Quasar SDSS J1130+0411," 2023, Presentation at AGN Winds at the Chesapeake.

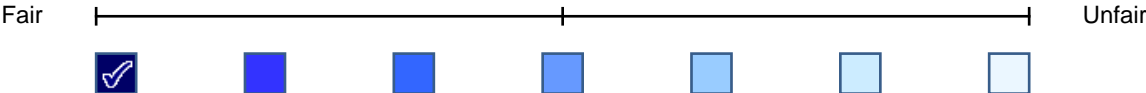
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Institution:	Virginia Tech
Title of Work Used:	AGN wind scaling relations and the co-evolution of black holes and galaxies
Copyright Holder:	Fiore, F. ; Feruglio, C. ; Shankar, F. ; Bischetti, M. ; Bongiorno, A.; Brusa, M. ; Carniani, S. ; Cicone, C.; Duras, F. ; Lamastra, A.; Mainieri, V. ; Marconi, A. ; Menci, N. ; Maiolino, R. ; Piconcelli, E. ; Vietri, G.; Zappacosta, L.
Publication Status:	Published
Publisher:	EDP Sciences
Place of Publication:	France
Publication Year:	2017
Description of Work:	The right panel of Figure 1, demonstrating the distribution of kinetic power of AGN gas and associated AGN luminosity.
Date of Evaluation:	August 9, 2024
Date of Intended Use:	August 1, 2024

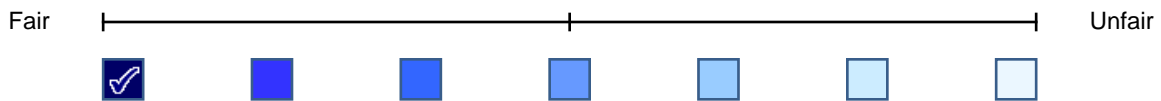
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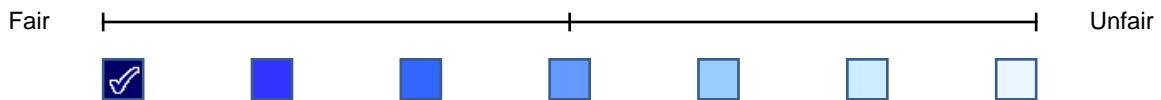
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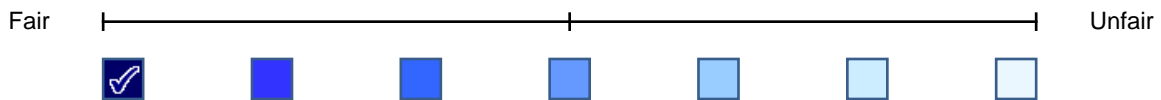
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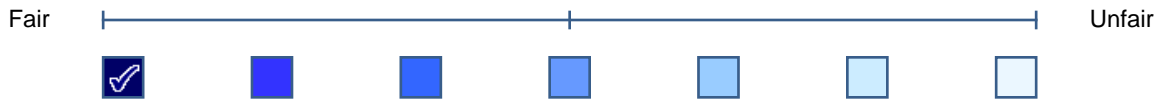
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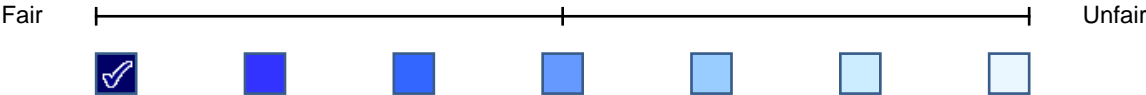
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Institution:	Virginia Tech
Title of Work Used:	A Mini-BAL Outflow at 900 pc from the Central Source: VLT/X-shooter Observations
Copyright Holder:	X. Xu, N. Arav, T. Miller, and C. Benn
Publication Status:	Published
Publisher:	IOP Publishing
Place of Publication:	USA
Publication Year:	2018
Description of Work:	Figure 3 has been partially used for my PhD dissertation for educational and informational purposes.
Date of Evaluation:	August 9, 2024
Date of Intended Use:	August 1, 2024

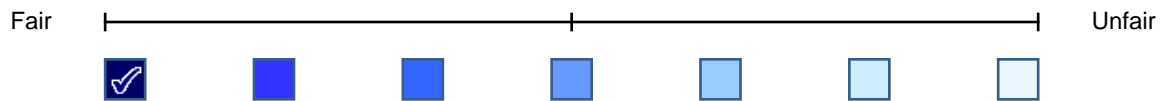
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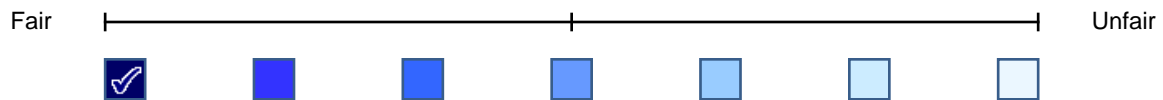
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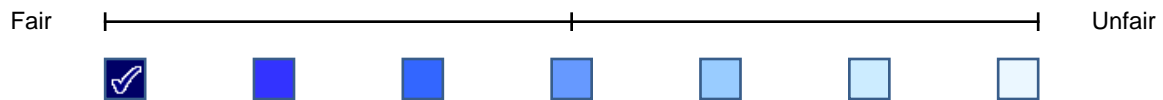
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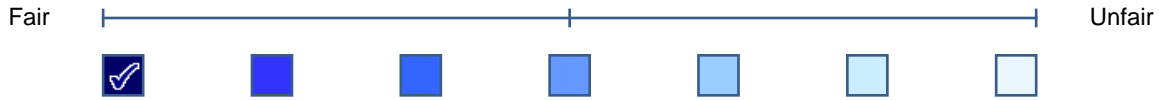
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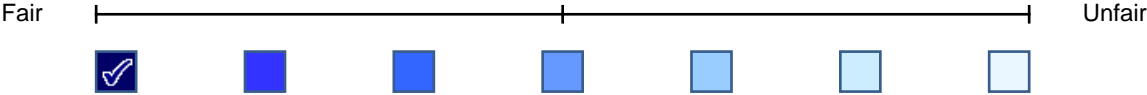
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Job Title:	
Institution:	Virginia Tech
Title of Work Used:	HST/COS Observations of Quasar Outflows in the 500-1050 Å... Rest Frame. I. The Most Energetic Outflows in the Universe and Other Discoveries
Copyright Holder:	N. Arav, X. Xu, T. Miller, G. A. Kriss, and R. Plesha
Publication Status:	Published
Publisher:	IOP Publishing
Place of Publication:	USA
Publication Year:	2020
Description of Work:	Figure 1 has been partially used for my PhD dissertation for educational and informational purposes.
Date of Evaluation:	August 9, 2024
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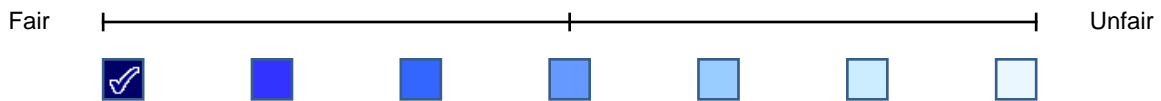
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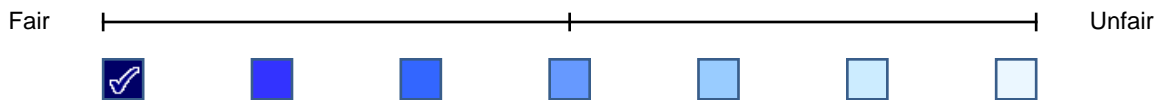
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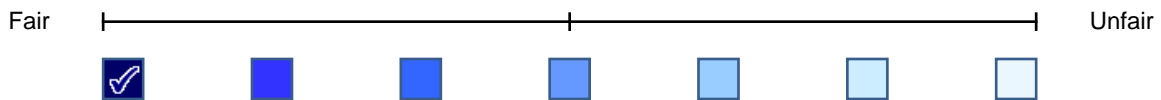
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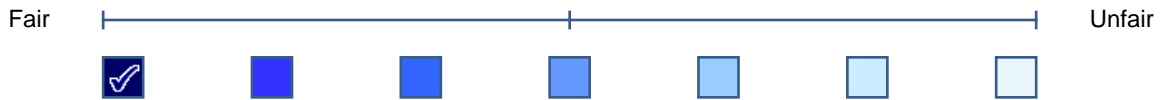
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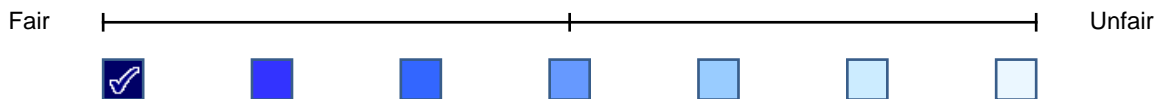
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Institution:	Virginia Tech
Title of Work Used:	The contribution of quasar absorption outflows to AGN feedback
Copyright Holder:	T. R. Miller, N. Arav, X. Xu, and G. A. Kriss
Publication Status:	Published
Publisher:	Oxford University Press
Place of Publication:	United Kingdom
Publication Year:	2020
Description of Work:	Figure1 has been partially used as part of my PhD dissertation for education and informational purposes.
Date of Evaluation:	August 9, 2024
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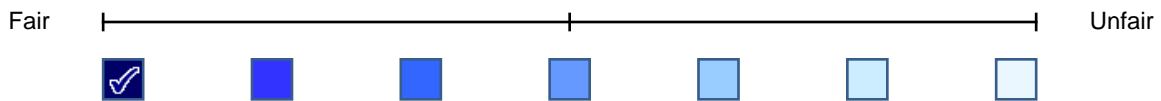
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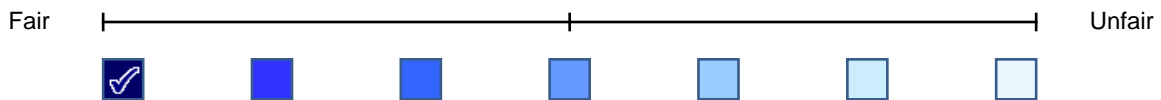
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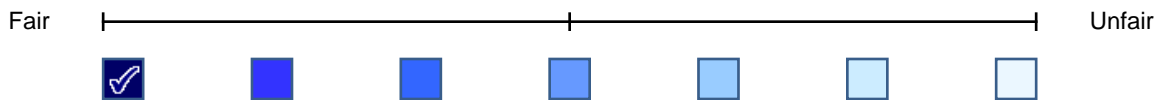
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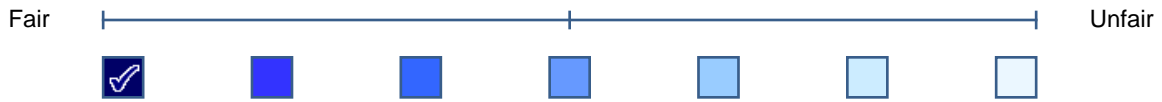
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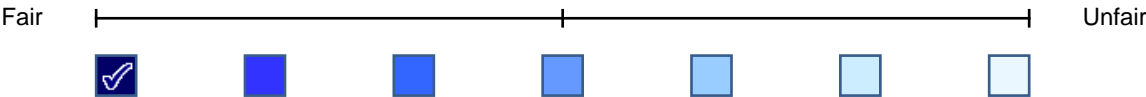
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Publication Status:	Published
Publisher:	IOP Publishing
Place of Publication:	USA
Publication Year:	2015
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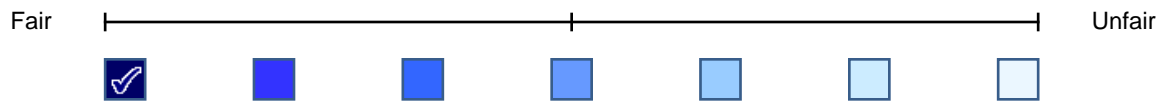
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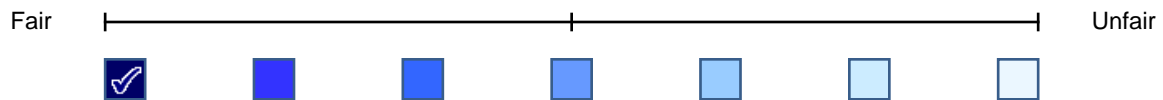
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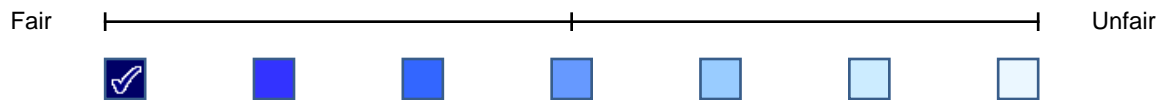
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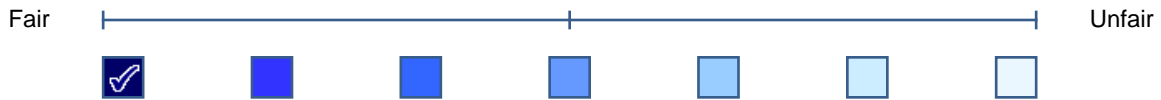
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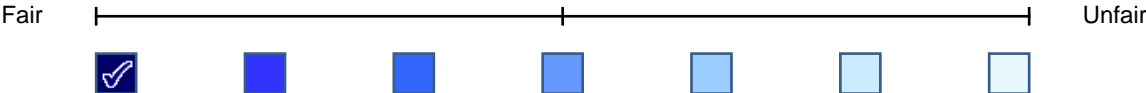
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Job Title:	
Institution:	Virginia Tech
Title of Work Used:	HST/COS Observations of Quasar Outflows in the 500-1050 Å... Rest Frame. V. Richness of Physical Diagnostics and Ionization Potential-dependent Velocity Shift in PKS J0352-0711
Copyright Holder:	T. R. Miller, N. Arav, X. Xu, G. A. Kriss, and R. J. Plesha
Publication Status:	Published
Publisher:	IOP Publishing
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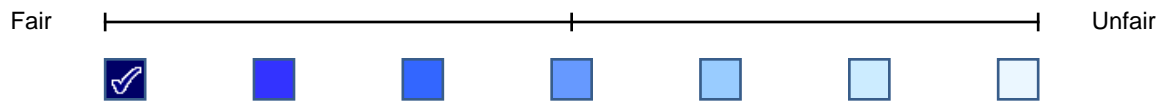
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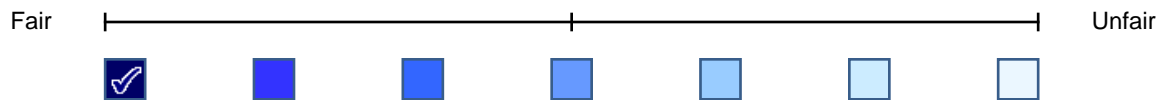
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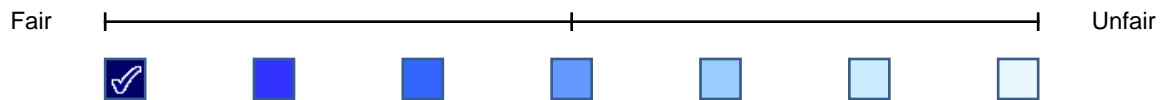
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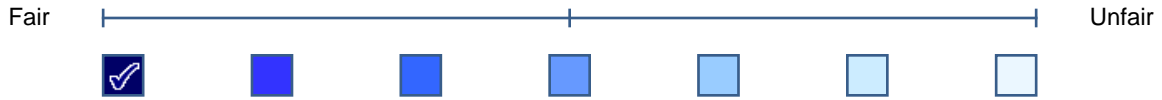
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