

Progress Reviews Analysis (Conducted by Justin Schmitz)

Background:

This analysis was conducted to improve progress reviews. The format of the study was a Pre/Post survey. The interventions were materials and suggestions on how to conduct progress reviews made available by human resources. The Pre survey was responded to by 95 managers within the company. The Post survey had 39 responses. There were 9 managers who had conducted progress reviews that responded to both surveys. These paired responses were the primary focus of the analysis.

Analysis:

The responses of the managers were converted to a 1-5 scale, Strongly Disagree to 1, Disagree to 2, Neither Disagree nor Agree to 3, Agree to 4 and Strongly Agree to 5. These responses were then summed into three outcomes of Language, Objectivity, and Value. The values of the outcomes could be between 0 and 10. The primary focus of analysis was on the change in these outcomes from the Pre to Post surveys. A Paired T Test (to examine change) and Spearman's Rank Order Correlation Coefficient (to examine the impact of experience) were asked to be conducted. A Paired T Test was conducted, however due to the small sample size these results may be inaccurate. Because of this, Wilcoxon Signed Rank was also calculated, as this is for when the assumptions of a Paired T Test are not met. The Wilcoxon results are statistically more appropriate, and therefore should be the focus for understanding change (Table 3). The Spearman's Rank Order Correlation was not conducted due to the small sample size. There are no effective association tests with sample sizes this small, so none were conducted. The general trends of the impact of experience were graphed and explored below (Graphs 1-3, 7-9) in place of this analysis.

Summary:

- The current progress review process is balanced in addressing the objectives, but there is room for improvement. (Table 1).
- The materials provided by human resources were ineffective at changing the outcome scores. There was not a statistically significant change in scores for the outcomes from the Pre to Post surveys (Table 3, Graphs 4-6).
- Experience did not appear to have an impact on the perception of progress reviews by the managers (Graphs 1-3, 7-9).

Pre Survey Analysis

Due to a larger response rate to the Pre survey some analysis of these responses was conducted. This sheds insight on how managers viewed progress reviews at the beginning of the study. This also makes use of as much data as possible.

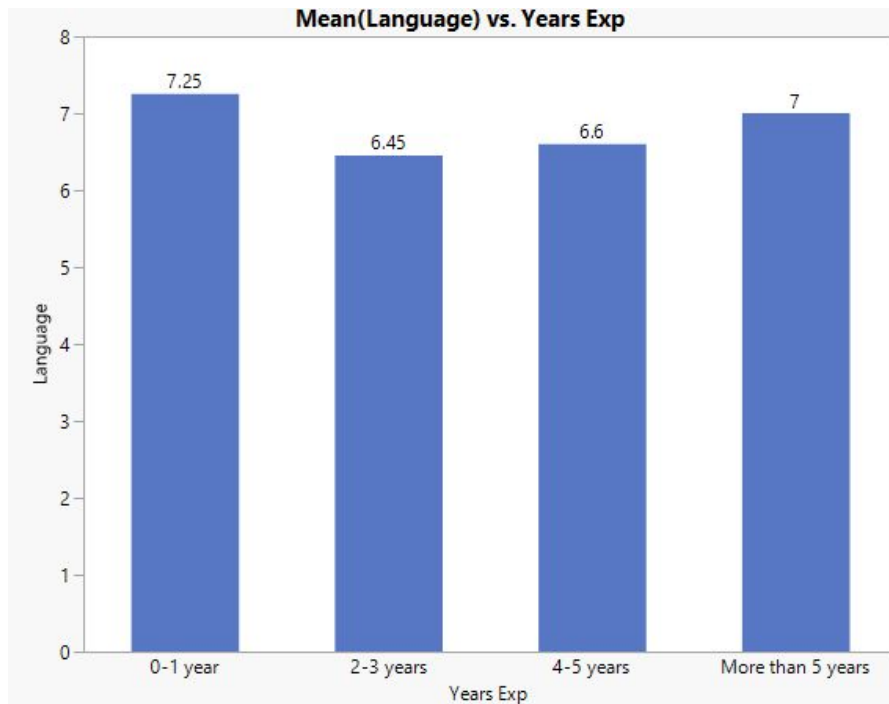
Table 1: Means and Standard Deviation of Responses in Pre Survey Across All Experience Levels (n=42)

Statistic	Language	Objectivity	Value
Mean	6.7	6.8	6.7
Standard Deviation	1.8	1.5	1.8

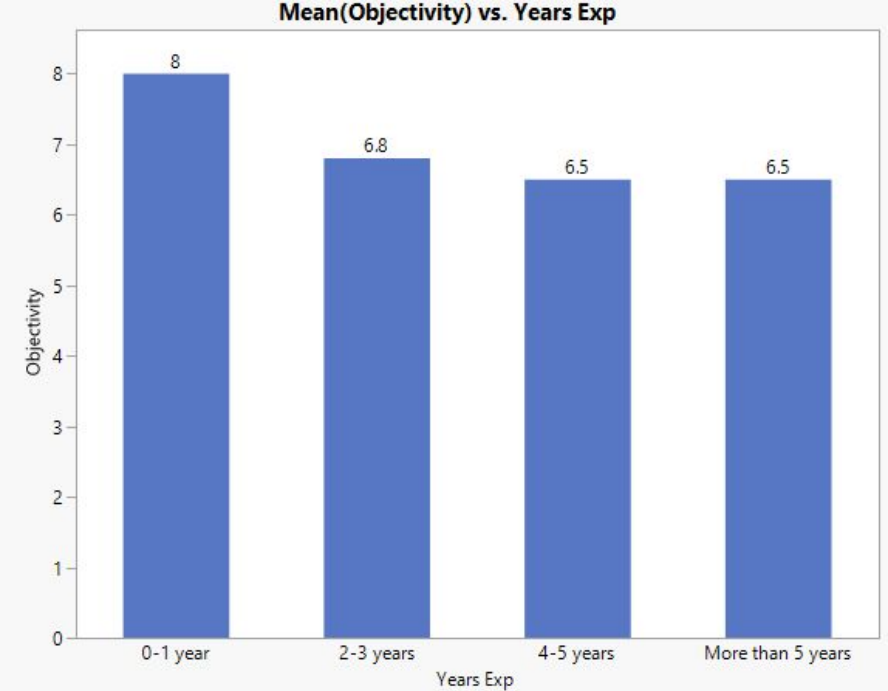
Notes Table 1:

- The means are not statistically significantly different between outcomes.

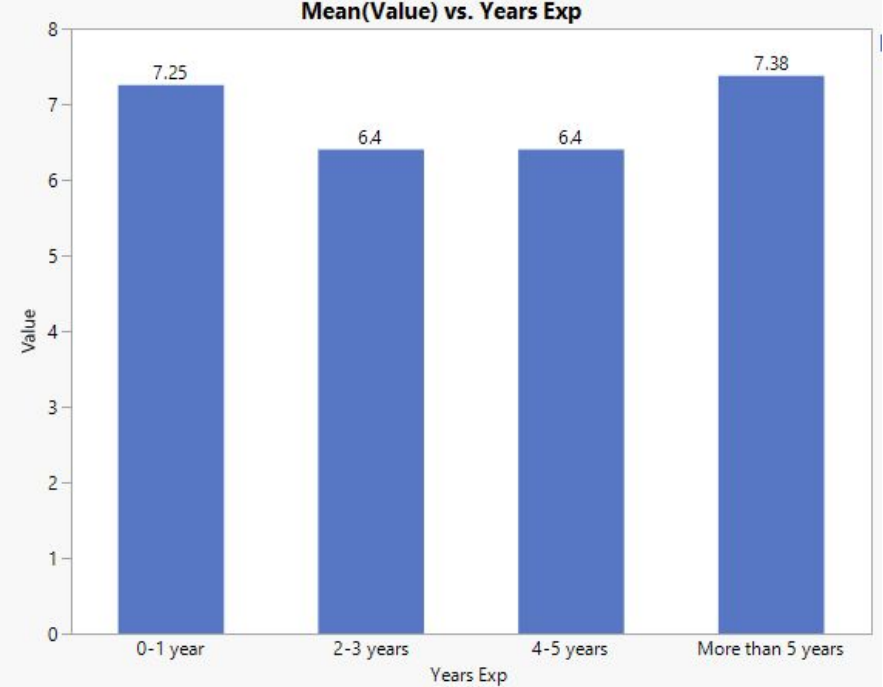
Graph 1: Mean Language (Pre) against Years of Experience:



Graph 2: Mean Objectivity (Pre) against Years of Experience:



Graph 3: Mean Value (Pre) against Years of Experience:



Notes Graphs 1-3:

- There is not a significant difference between the means based on experience.
- There are not any trends between outcome scores and experience.

Individual Change From Pre to Post

Table 2: Change in Scores by Individual Survey ID:

Survey ID (Years Experience)	Language Change	Objectivity Change	Value Change
9 (2-3 years)	3	4	4
19 (>5 years)	1	1	3
30 (>5 years)	4	3	-1
37 (4-5 years)	0	0	1
62 (4-5 years)	2	0	3
70 (2-3 years)	5	3	6
75 (2-3 years)	-1	1	-2
80 (2-3 years)	0	0	0
88 (0-1 year)	0	0	-1

Notes Table 2:

- Change in one outcome is not indicative of change in the other outcomes
- Change in Value had the most variability.
- See Graphs 4-6 for visualization.

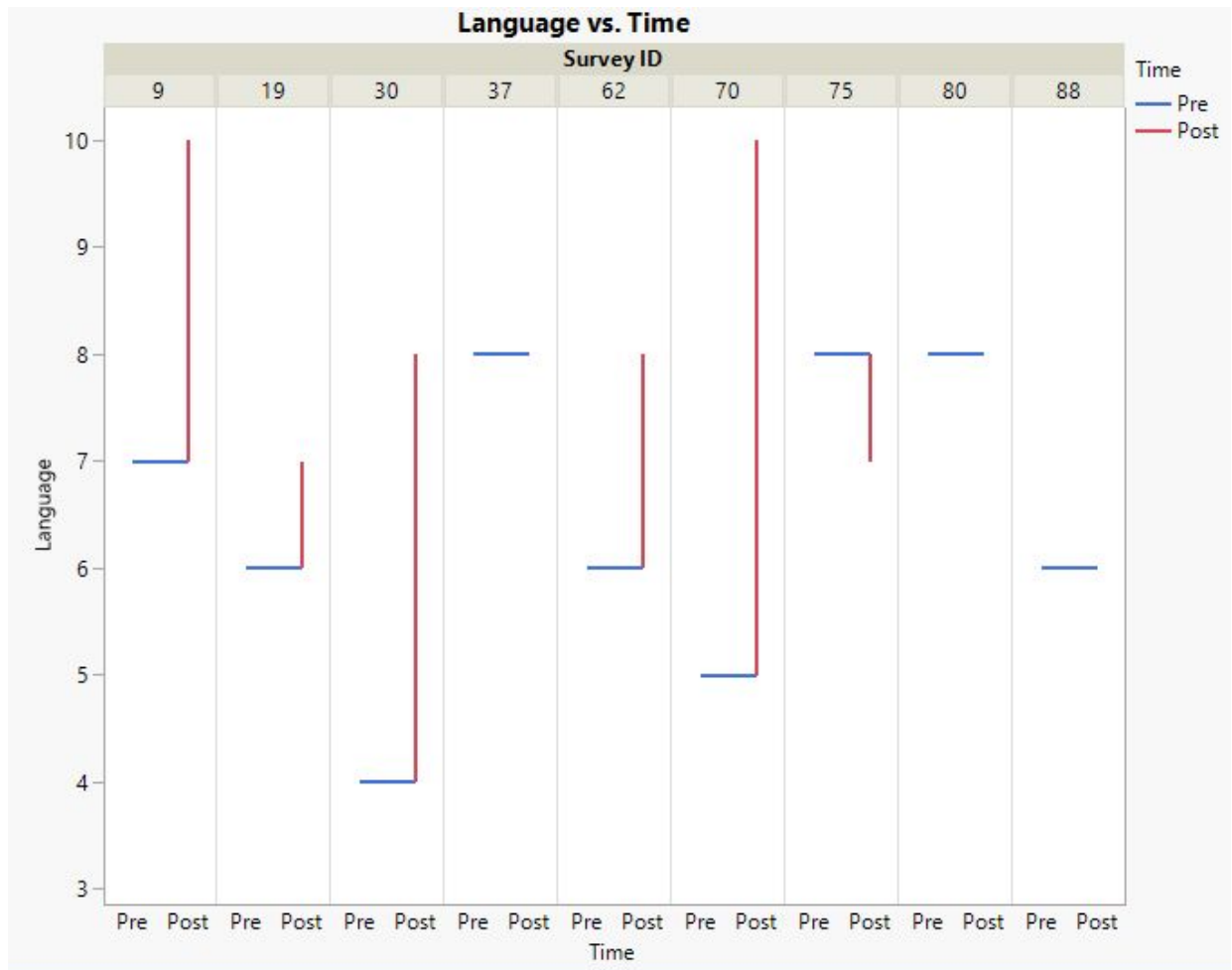
Table 3: T Scores, 95% Confidence Interval, Wilcoxon Signed Rank for Change

Statistic	Language	Objectivity	Value
Mean of Change	1.556	1.333	1.444
T Score and 95% CI	0.054 (-0.034, 3.145)	0.035 (0.118, 2.549)	0.147 (-0.629, 3.518)
Wilcoxon Signed Rank	0.094	0.063	0.195

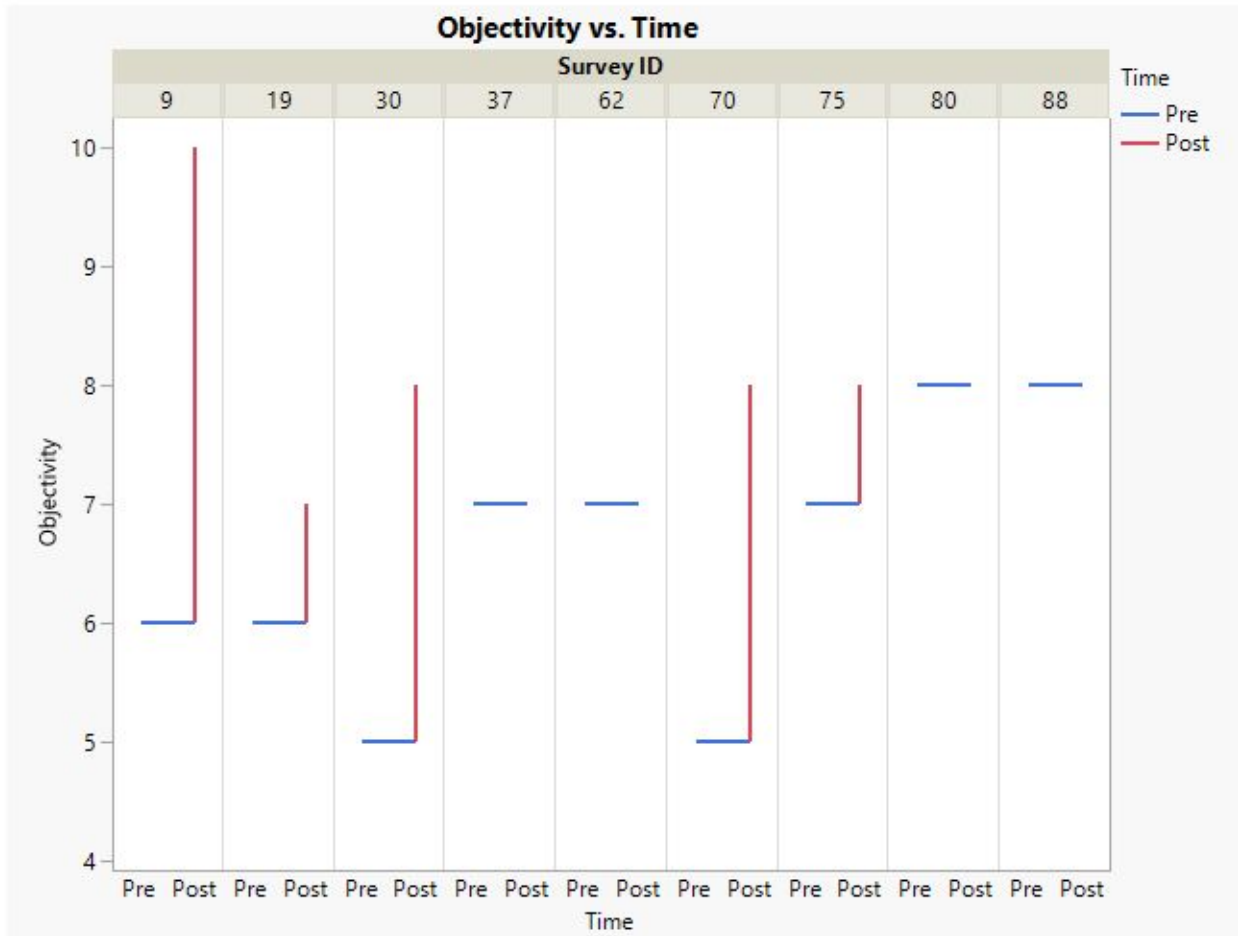
Notes Table 3:

- There was not a significant change in outcomes scores (see Wilcoxon Signed Rank row)
- The mean of change across all outcomes was very similar.

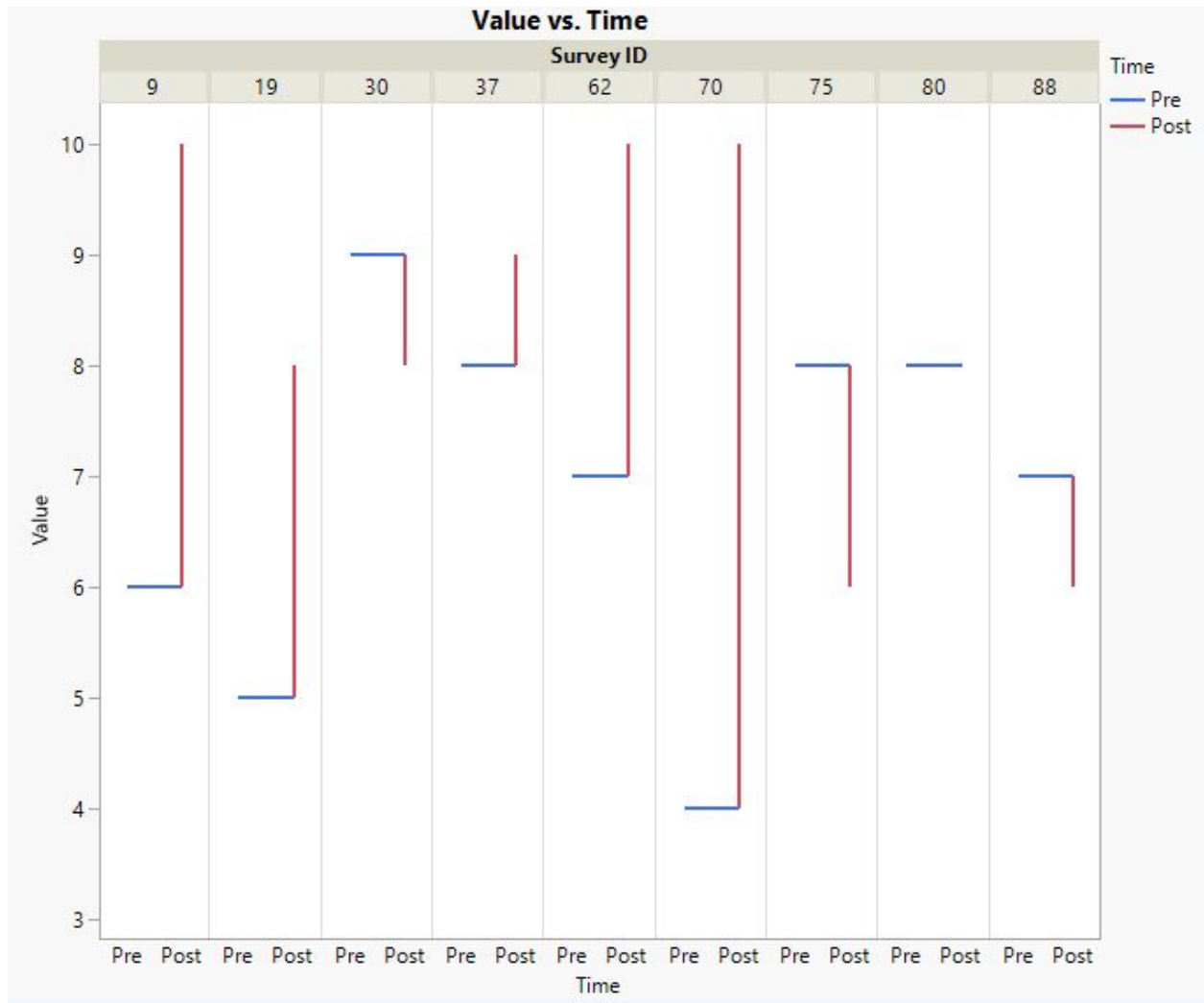
Graph 4: Individual Change Pre to Post for Language:



Graph 5: Individual Change Pre to Post for Objectivity:



Graph 6: Individual Change Pre to Post for Value:

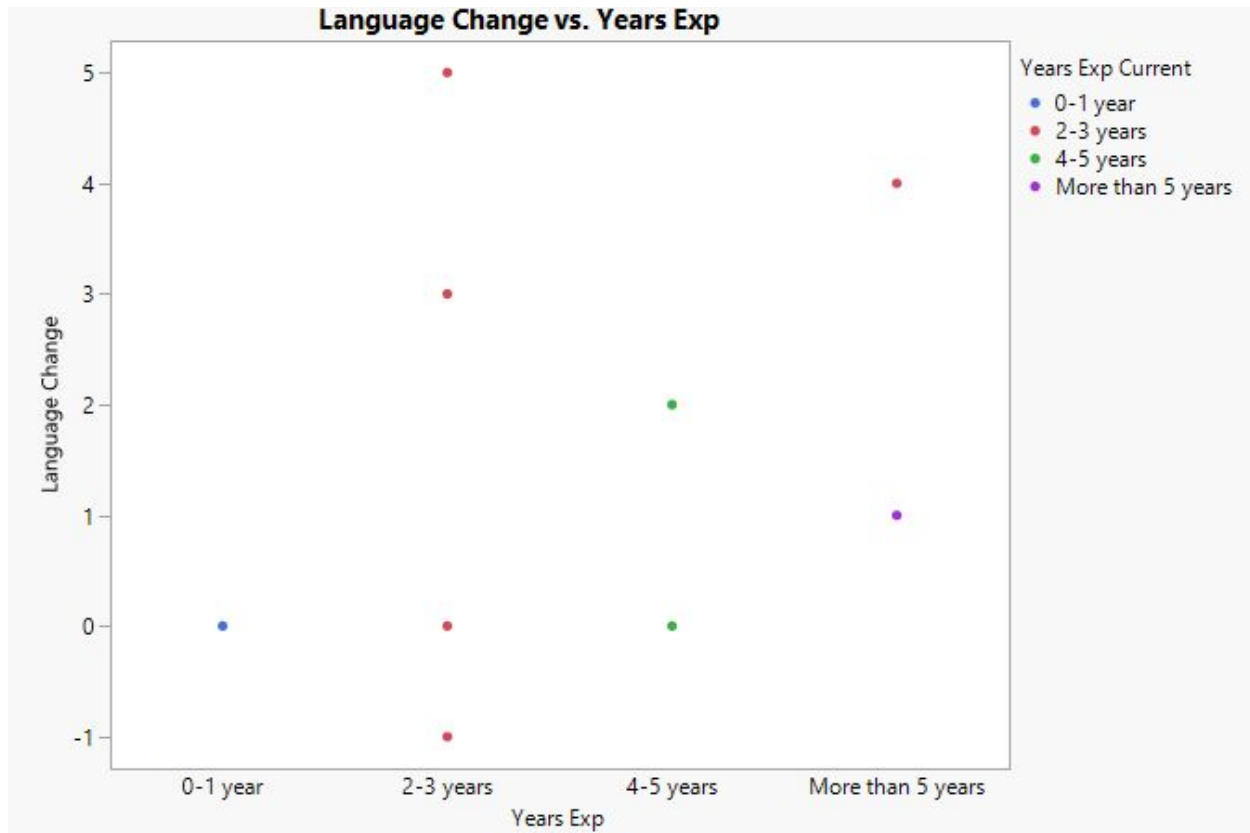


Notes Graphs 4-6:

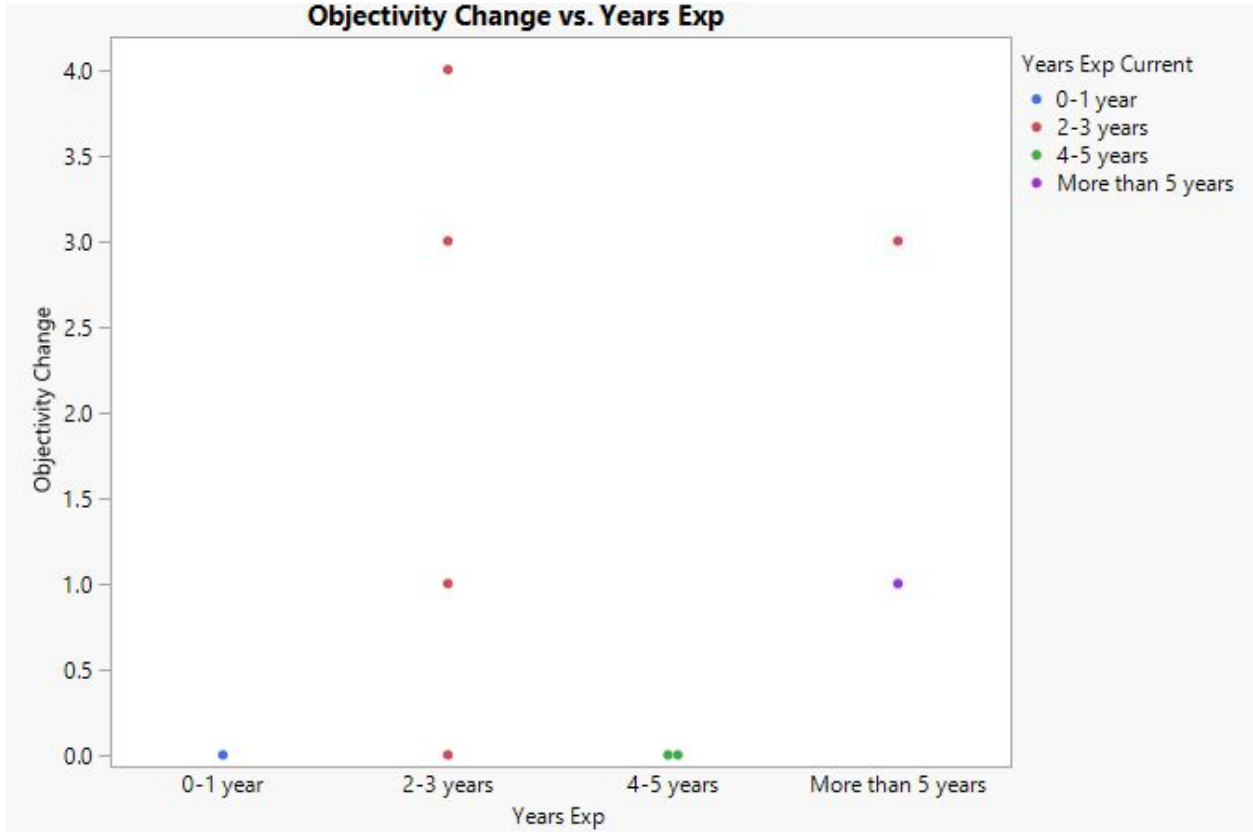
- Vertical red lines illustrate the change. Those without a red line did not change
- There was high variability of change for all outcomes .

Impact of Experience on Change

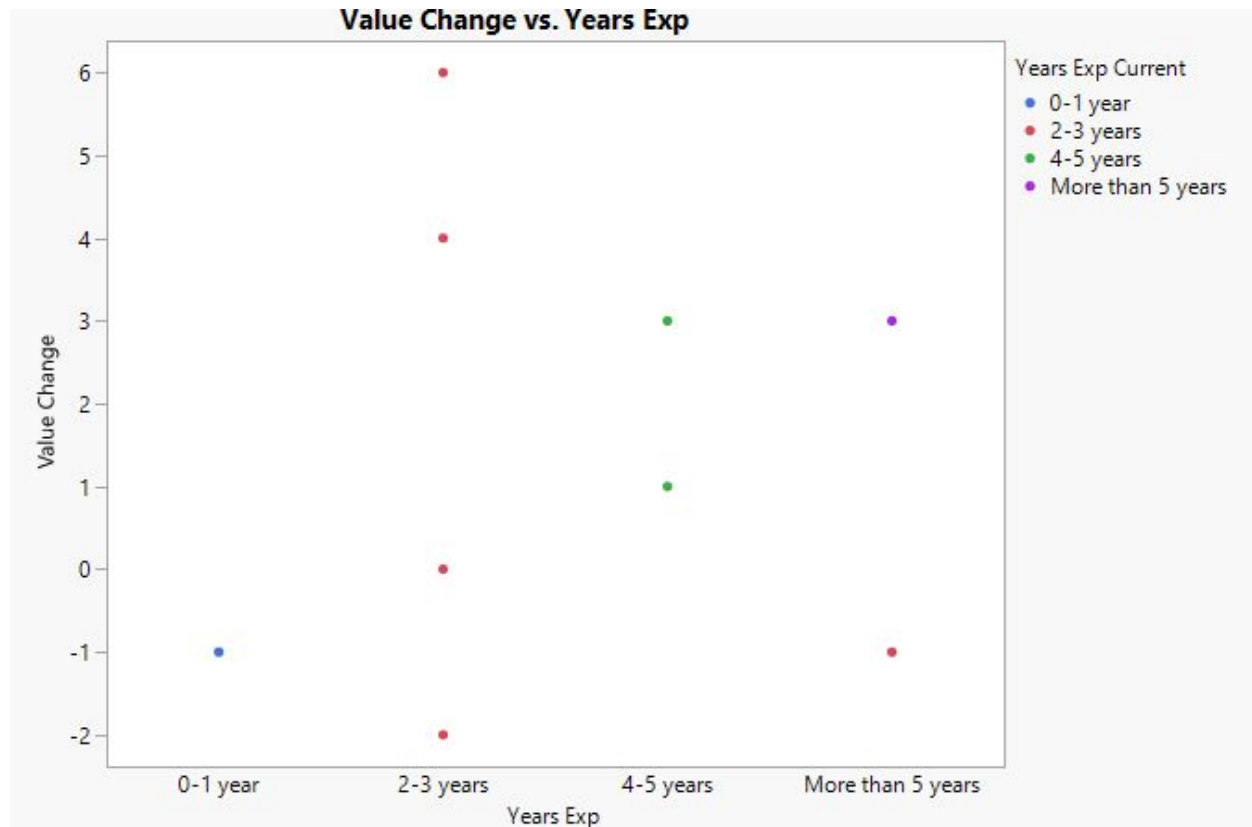
Graph 7: Individual Change in Language by Years Experience colored by Years Experience
Current Position:



Graph 8: Individual Change in Objectivity by Years Experience colored by Years Experience
Current Position:



Graph 9: Individual Change in Value by Years Experience colored by Years Experience Current Position:



Notes Graphs 7-9:

- There are no trends between change in an outcome and years of experience or years of experience at a current position.
- Change in one outcome was not indicative of change in another outcome
- There is high variation, even within groups of managers with similar levels of experience.