Online Supplement for *Predictability Effects and Parafoveal Processing in Older Readers*

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Table S1

Mean (and Standard Deviation) Reading Measures on the Target for Experiment 1 across

Preview Conditions for Older Adults

Measure	Valid preview	Plausible Neighbor preview	Plausible Unrelated preview	Implausible Neighbor preview	Implausible Unrelated preview
Fixation Duration Measures (ms)					
First fixation	252 (29)	253 (32)	259 (26)	270 (31)	277 (31)
Single fixation	257 (33)	257 (33)	261 (26)	277 (35)	284 (37)
Gaze duration	269 (35)	276 (37)	284 (37)	300 (36)	316 (41)
Go-past duration	360 (81)	378 (80)	388 (97)	405 (98)	402 (73)
Total duration	392 (89)	431 (74)	432 (84)	433 (72)	435 (74)
Fixation Probability Measures					
Skipping	.26 (.12)	.26 (.12)	.29 (.14)	.27 (.12)	.24 (.12)
Regressions out	.19 (.13)	.20 (.14)	.20 (.12)	.22 (.13)	.21 (.14)
Regressions in	.23 (.10)	.29 (.18)	.30 (.16)	.24 (.13)	.24 (.11)

Table S2

Results of the (Generalized) Linear Mixed-Effects Models for Target Reading Measures for both Older Adults and Younger Adults in Experiment 1. Significant Effects are Indicated in Bold.

Measure	Fixed effect	*b*	*SE*	*t/z*
First fixation duration	Intercept	**259.52**	**3.43**	**75.70**
	Age	7.70	6.26	1.23
	Valid preview effect	**-18.91**	**3.07**	**-6.16**
	Plausibility preview effect	**-16.34**	**2.82**	**-5.79**
	Orthographic relatedness effect	**-11.13**	**2.91**	**-3.83**
	Plausibility × Relatedness	3.45	2.91	1.19
	Age × Valid preview effect	10.37	5.90	1.76
	Age × Plausibility preview effect	-2.06	5.45	-0.38
	Age × Relatedness preview effect	**11.11**	**5.00**	**2.22**
	Age × Plausibility × Relatedness	-0.24	5.35	-0.05
Single fixation duration	Intercept	**265.17**	**3.92**	**67.62**
	Age	5.15	7.13	0.72
	Valid preview effect	**-21.68**	**3.46**	**-6.26**
	Plausibility preview effect	**-21.08**	**2.89**	**-7.29**
	Orthographic relatedness effect	**-13.03**	**3.47**	**-3.76**
	Plausibility × Relatedness	3.87	3.36	1.15
	Age × Valid preview effect	**14.44**	**6.55**	**2.21**
	Age × Plausibility preview effect	-0.60	5.45	-0.11
	Age × Relatedness preview effect	**16.03**	**5.81**	**2.76**
	Age × Plausibility × Relatedness	-0.26	5.90	-0.04
Gaze duration	Intercept	**290.91**	**4.84**	**60.14**
	Age	-2.05	8.68	-0.24
	Valid preview effect	**-32.73**	**4.19**	**-7.81**
	Plausibility preview effect	**-25.32**	**3.87**	**-6.54**
	Orthographic relatedness effect	**-17.46**	**3.90**	**-4.47**
	Plausibility × Relatedness	4.19	3.78	1.11
	Age × Valid preview effect	14.60	7.86	1.86
	Age × Plausibility preview effect	-5.89	7.14	-0.83
	Age × Relatedness preview effect	10.96	6.92	1.59
	Age × Plausibility × Relatedness	5.94	6.99	0.85

Go-past duration	Intercept	**371.25**	**8.47**	**43.81**
	Age	**33.15**	**14.95**	**2.22**
	Valid preview effect	**-53.37**	**6.69**	**-7.98**
	Plausibility preview effect	**-25.32**	**7.43**	**-3.41**
	Orthographic relatedness effect	**-22.44**	**7.21**	**-3.11**
	Plausibility × Relatedness	6.35	6.74	0.94
	Age × Valid preview effect	**33.50**	**13.29**	**2.52**
	Age × Plausibility preview effect	11.55	13.08	0.88
	Age × Relatedness preview effect	**37.38**	**12.53**	**2.98**
	Age × Plausibility × Relatedness	-13.84	11.85	-1.17
Total duration	Intercept	**436.11**	**14.56**	**29.95**
	Age	-23.84	23.81	-1.00
	Valid preview effect	**-53.40**	**8.64**	**-6.18**
	Plausibility preview effect	6.50	7.32	0.89
	Orthographic relatedness effect	-12.19	7.26	-1.68
	Plausibility × Relatedness	-1.26	7.38	-0.17
	Age × Valid preview effect	28.50	16.51	1.73
	Age × Plausibility preview effect	-22.90	14.33	-1.60
	Age × Relatedness preview effect	12.89	12.72	1.01
	Age × Plausibility × Relatedness	9.30	14.34	0.65
Skipping	Intercept	**-1.44**	**0.08**	**-17.64**
	Age	**0.43**	**0.15**	**2.87**
	Valid preview effect	**0.15**	**0.07**	**2.17**
	Plausibility preview effect	**0.27**	**0.07**	**3.89**
	Orthographic relatedness effect	0.01	0.07	0.16
	Plausibility × Relatedness	**-0.21**	**0.07**	**-3.04**
	Age × Valid preview effect	**-0.33**	**0.13**	**-2.50**
	Age × Plausibility preview effect	-0.14	0.12	-1.20
	Age × Relatedness preview effect	0.05	0.12	0.41
	Age × Plausibility × Relatedness	-0.11	0.13	-0.90
Regressions out	Intercept	**-1.73**	**0.09**	**-18.98**
	Age	**0.38**	**0.16**	**2.42**
	Valid preview effect	**-0.37**	**0.09**	**-3.91**
	Plausibility preview effect	-0.15	0.08	-1.83
	Orthographic relatedness effect	**-0.19**	**0.08**	**-2.43**
	Plausibility × Relatedness	0.05	0.08	0.58
	Age × Valid preview effect	**0.50**	**0.18**	**2.82**
	Age × Plausibility preview effect	0.13	0.16	0.82
	Age × Relatedness preview effect	**0.43**	**0.15**	**2.96**
	Age × Plausibility × Relatedness	-0.11	0.15	-0.73

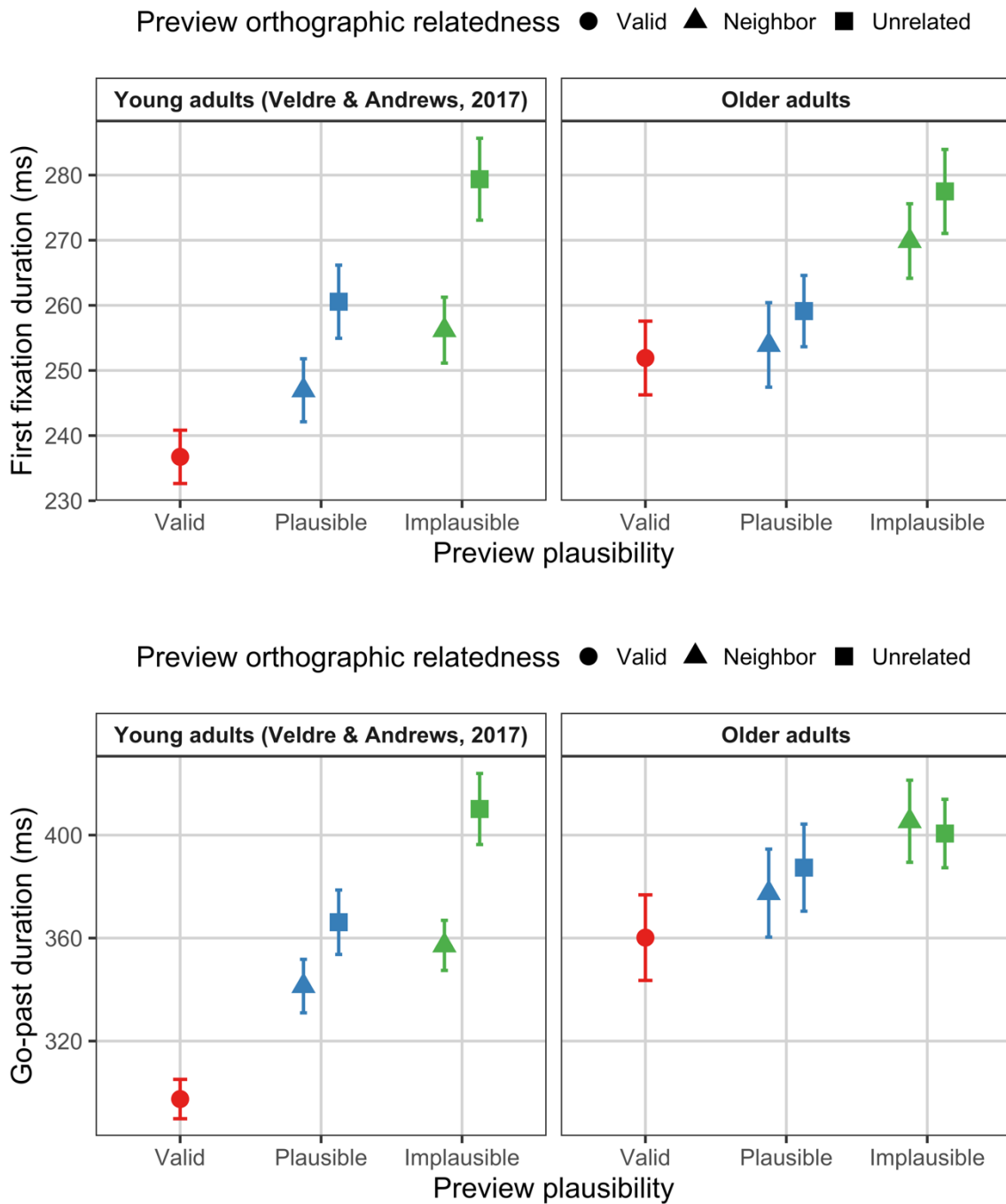| Regressions in	Intercept	**-0.86**	**0.10**	**-9.05**
	Age	**-0.54**	**0.16**	**-3.44**
	Valid preview effect	**-0.21**	**0.08**	**-2.83**
	Plausibility preview effect	**0.36**	**0.07**	**5.37**
	Orthographic relatedness effect	-0.05	0.07	-0.77
	Plausibility × Relatedness	-0.07	0.07	-1.09
	Age × Valid preview effect	-0.08	0.15	-0.51
	Age × Plausibility preview effect	-0.19	0.13	-1.46
	Age × Relatedness preview effect	-0.05	0.13	-0.42
	Age × Plausibility × Relatedness	0.14	0.13	1.10

Table S3

Results of the (Generalized) Linear Mixed-Effects Models for Target Reading Measures for

Older Adults in Experiment 1. Significant Effects are Indicated in Bold.

Measure	Fixed effect	*b*	*SE*	*t/z*
First fixation duration	Intercept	**263.38**	**5.09**	**51.76**
	Valid preview effect	**-13.87**	**4.41**	**-3.15**
	Plausibility preview effect	**-17.92**	**3.72**	**-4.81**
	Orthographic relatedness effect	-5.89	4.24	-1.39
	Plausibility × Relatedness	3.46	3.72	0.93
Single fixation duration	Intercept	**267.95**	**5.75**	**46.59**
	Valid preview effect	**-14.55**	**4.75**	**-3.07**
	Plausibility preview effect	**-21.67**	**3.82**	**-5.68**
	Orthographic relatedness effect	-5.29	4.69	-1.13
	Plausibility × Relatedness	3.55	4.09	0.87
Gaze duration	Intercept	**289.98**	**6.84**	**42.38**
	Valid preview effect	**-26.41**	**5.30**	**-4.98**
	Plausibility preview effect	**-27.97**	**5.27**	**-5.31**
	Orthographic relatedness effect	**-12.51**	**5.45**	**-2.30**
	Plausibility × Relatedness	6.96	5.20	1.34
Go-past duration	Intercept	**388.04**	**13.59**	**28.56**
	Valid preview effect	**-35.48**	**11.18**	**-3.17**
	Plausibility preview effect	-19.78	11.92	-1.66
	Orthographic relatedness effect	-4.68	10.16	-0.46
	Plausibility × Relatedness	-0.38	12.01	-0.03
Total duration	Intercept	**423.99**	**17.54**	**24.18**
	Valid preview effect	**-39.08**	**12.28**	**-3.18**
	Plausibility preview effect	-3.17	10.21	-0.31
	Orthographic relatedness effect	-5.18	9.57	-0.54
	Plausibility × Relatedness	4.91	9.41	0.52
Skipping	Intercept	**-1.16**	**0.11**	**-10.24**
	Valid preview effect	-0.06	0.11	-0.53
	Plausibility preview effect	0.16	0.09	1.79
	Orthographic relatedness effect	0.03	0.09	0.34
	Plausibility × Relatedness	**-0.27**	**0.11**	**-2.53**

Regressions out	Intercept	**-1.54**	**0.13**	**-12.03**
	Valid preview effect	-0.15	0.14	-1.14
	Plausibility preview effect	-0.07	0.12	-0.53
	Orthographic relatedness effect	0.05	0.11	0.49
	Plausibility × Relatedness	-0.03	0.12	-0.22
Regressions in	Intercept	**-1.11**	**0.09**	**-13.01**
	Valid preview effect	-0.20	0.11	-1.78
	Plausibility preview effect	**0.27**	**0.10**	**2.62**
	Orthographic relatedness effect	-0.09	0.10	-0.86
	Plausibility × Relatedness	-0.01	0.11	-0.07

Figure S1

Target First Fixation Duration (Upper Panels), Go-Past Duration (Middle Panels), and Regression-out Probability (Lower Panels) in each of the Preview Conditions in Experiment 1 for Younger and Older Readers. Error Bars are +/- SEM.
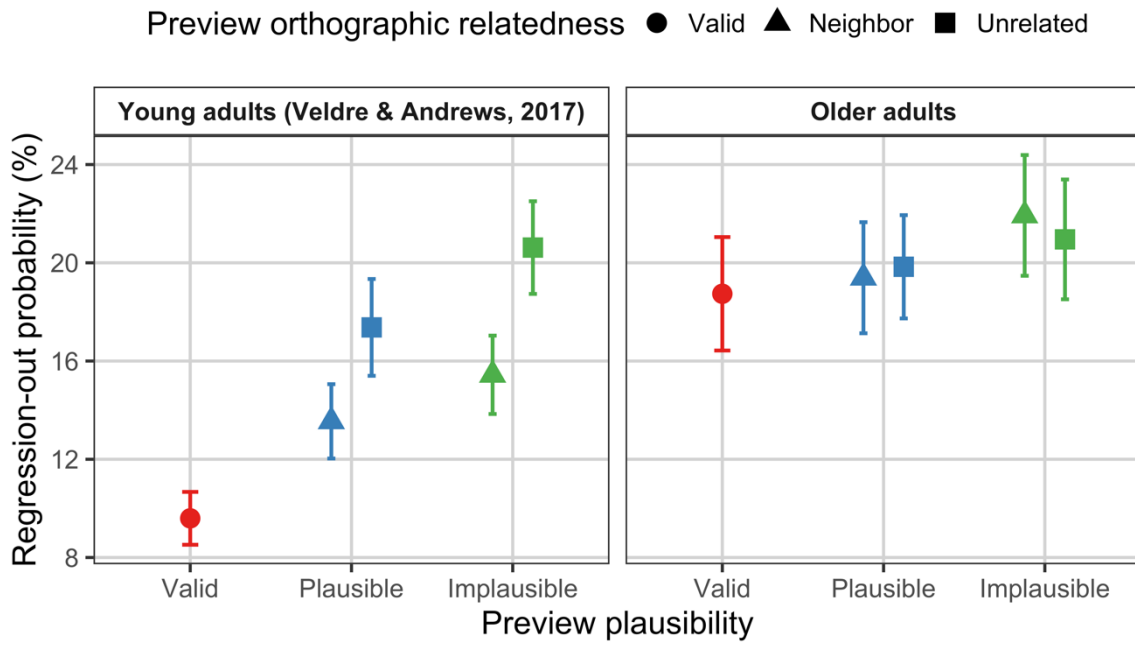
Table S4

Mean (and Standard Deviation) Reading Measures on the Target for Experiment 2 across Preview Conditions for Older Adults

	Predictable target				Unpredictable target			
	Predictable preview (Valid)	Unpredictable preview (Plausible)	Related preview (Implausible)	Unrelated preview (Implausible)	Unpredictable preview (Valid)	Predictable preview (Plausible)	Related preview (Implausible)	Unrelated preview (Implausible)
Fixation duration measures (ms)								
First fixation	220 (30)	241 (33)	255 (36)	256 (31)	237 (32)	225 (29)	266 (39)	263 (39)
Single fixation	222 (33)	245 (39)	258 (39)	263 (35)	238 (33)	225 (31)	268 (45)	271 (44)
Gaze duration	232 (41)	260 (43)	276 (36)	276 (36)	255 (39)	237 (32)	295 (47)	294 (43)
Go-past duration	279 (66)	329 (93)	343 (68)	366 (139)	345 (114)	296 (108)	394 (113)	375 (97)
Total duration	279 (81)	344 (82)	331 (79)	334 (63)	333 (65)	377 (117)	387 (70)	375 (70)
Fixation probability measures								
Skipping	.31 (.14)	.29 (.18)	.23 (.16)	.27 (.15)	.29 (.15)	.32 (.15)	.27 (.17)	.27 (.14)
Regressions out	.08 (.10)	.11 (.11)	.16 (.11)	.13 (.10)	.12 (.11)	.10 (.11)	.19 (.15)	.15 (.12)
Regressions in	.13 (.13)	.22 (.15)	.17 (.14)	.15 (.13)	.19 (.15)	.33 (.17)	.28 (.14)	.25 (.16)

Table S5

Results of the (Generalized) Linear Mixed-Effects Models for Target Reading Measures for both Older Adults and Younger Adults in Experiment 2. Significant Effects are Indicated in Bold.

Measure	Fixed effect	*b*	*SE*	*t/z*
First fixation duration	Intercept	**247.23**	**3.41**	**72.42**
	Age	-2.08	6.34	-0.33
	Target predictability	0.31	2.30	0.13
	Valid preview effect	**-9.95**	**3.31**	**-3.00**
	Plausibility preview effect	**-26.70**	**3.46**	**-7.73**
	Contextually related preview effect	-3.14	3.03	-1.04
	Age × Predictability	**8.29**	**4.08**	**2.03**
	Age × Valid PE	**13.26**	**5.89**	**2.25**
	Age × Plausibility PE	-2.36	5.83	-0.41
	Age × Related PE	10.30	5.93	1.74
	Predictability × Valid PE	**30.98**	**5.37**	**5.77**
	Predictability × Plausibility PE	**-15.73**	**4.63**	**-3.40**
	Predictability × Related PE	0.75	5.27	0.14
Single fixation duration	Intercept	**250.83**	**3.60**	**69.59**
	Age	-3.00	6.70	-0.45
	Target predictability	-1.04	2.51	-0.42
	Valid preview effect	**-10.66**	**3.43**	**-3.11**
	Plausibility preview effect	**-30.70**	**3.92**	**-7.84**
	Contextually related preview effect	**-7.16**	**3.35**	**-2.14**
	Age × Predictability	6.59	4.45	1.48
	Age × Valid PE	**13.13**	**6.10**	**2.15**
	Age × Plausibility PE	-0.01	6.52	0.00
	Age × Related PE	10.53	6.42	1.64
	Predictability × Valid PE	**33.52**	**5.62**	**5.97**
	Predictability × Plausibility PE	**-16.37**	**4.92**	**-3.33**
	Predictability × Related PE	-0.06	5.69	-0.01
Gaze duration	Intercept	**271.95**	**4.20**	**64.74**
	Age	-11.42	7.82	-1.46
	Target predictability	4.15	3.14	1.32
	Valid preview effect	**-16.41**	**4.33**	**-3.79**
	Plausibility preview effect	**-32.44**	**4.52**	**-7.18**
	Contextually related preview effect	-4.79	3.76	-1.27
	Age × Predictability	6.45	5.45	1.18

	Age × Valid PE	**23.58**	**8.00**	**2.95**
	Age × Plausibility PE	-7.72	7.85	-0.98
	Age × Related PE	9.90	7.27	1.36
	Predictability × Valid PE	**43.87**	**6.81**	**6.44**
	Predictability × Plausibility PE	**-28.83**	**5.87**	**-4.91**
	Predictability × Related PE	0.96	6.67	0.15
Go-past duration	Intercept	**345.15**	**8.27**	**41.74**
	Age	-8.79	14.98	-0.59
	Target predictability	**15.79**	**5.59**	**2.83**
	Valid preview effect	**-18.47**	**8.69**	**-2.13**
	Plausibility preview effect	**-54.31**	**7.63**	**-7.12**
	Contextually related preview effect	-3.46	7.25	-0.48
	Age × Predictability	**23.67**	**10.40**	**2.28**
	Age × Valid PE	**40.92**	**16.69**	**2.45**
	Age × Plausibility PE	4.24	14.83	0.29
	Age × Related PE	6.31	14.32	0.44
	Predictability × Valid PE	**79.84**	**13.31**	**6.00**
	Predictability × Plausibility PE	**-51.02**	**11.46**	**-4.45**
	Predictability × Related PE	4.70	13.03	0.36
Total duration	Intercept	**355.46**	**8.83**	**40.24**
	Age	-20.75	16.17	-1.28
	Target predictability	**37.28**	**6.64**	**5.62**
	Valid preview effect	**-72.50**	**8.75**	**-8.29**
	Plausibility preview effect	3.30	6.51	0.51
	Contextually related preview effect	3.76	6.65	0.56
	Age × Predictability	14.72	10.24	1.44
	Age × Valid PE	**42.11**	**16.55**	**2.54**
	Age × Plausibility PE	1.92	11.24	0.17
	Age × Related PE	-0.84	12.01	-0.07
	Predictability × Valid PE	**28.59**	**11.47**	**2.49**
	Predictability × Plausibility PE	-7.36	9.81	-0.75
	Predictability × Related PE	-0.16	11.19	-0.01
Skipping	Intercept	**-1.27**	**0.09**	**-14.29**
	Age	**0.39**	**0.12**	**3.20**
	Predictable vs. Unpredictable	**0.26**	**0.08**	**3.37**
	Plausible vs. Implausible	**0.35**	**0.06**	**6.27**
	Implausible related vs. unrelated	0.00	0.08	-0.03
	Age × Predictable preview	-0.09	0.13	-0.68
	Age × Plausible preview	**-0.21**	**0.10**	**-2.02**
	Age × Implausible related preview	-0.25	0.15	-1.73

Regressions out	Intercept	**-1.80**	**0.10**	**-18.82**
	Age	0.14	0.16	0.90
	Target predictability	0.08	0.07	1.17
	Valid preview effect	-0.06	0.11	-0.57
	Plausibility preview effect	**-0.52**	**0.09**	**-5.59**
	Contextually related preview effect	0.14	0.10	1.46
	Age × Predictability	**0.34**	**0.13**	**2.56**
	Age × Valid PE	0.05	0.22	0.21
	Age × Plausibility PE	0.22	0.18	1.25
	Age × Related PE	0.12	0.18	0.67
	Predictability × Valid PE	**0.76**	**0.20**	**3.79**
	Predictability × Plausibility PE	**-0.36**	**0.16**	**-2.25**
	Predictability × Related PE	0.13	0.16	0.82
Regressions in	Intercept	**-1.26**	**0.07**	**-17.27**
	Age	**-0.31**	**0.14**	**-2.20**
	Target predictability	**0.44**	**0.06**	**6.87**
	Valid preview effect	**-0.78**	**0.08**	**-10.04**
	Plausibility preview effect	**0.27**	**0.07**	**4.03**
	Contextually related preview effect	**0.18**	**0.08**	**2.18**
	Age × Predictability	**0.26**	**0.11**	**2.51**
	Age × Valid PE	0.15	0.14	1.04
	Age × Plausibility PE	0.09	0.12	0.73
	Age × Related PE	-0.07	0.14	-0.51
	Predictability × Valid PE	-0.11	0.14	-0.77
	Predictability × Plausibility PE	0.13	0.11	1.13
	Predictability × Related PE	-0.08	0.13	-0.62

Table S6

Results of the (Generalized) Linear Mixed-Effects Models for Target Reading Measures for

Older Adults in Experiment 2. Significant Effects are Indicated in Bold.

Measure	Fixed effect	*b*	*SE*	*t/z*
First fixation duration	Intercept	**246.21**	**4.47**	**55.06**
	Target predictability	4.65	2.76	1.68
	Valid preview effect	-3.79	4.21	-0.90
	Plausibility preview effect	**-27.48**	**4.15**	**-6.63**
	Contextually related preview effect	1.95	4.26	0.46
	Predictability × Valid PE	**34.38**	**7.52**	**4.57**
	Predictability × Plausibility PE	**-23.00**	**6.53**	**-3.52**
	Predictability × Related PE	9.34	7.48	1.25
Single fixation duration	Intercept	**249.35**	**4.78**	**52.22**
	Target predictability	2.49	2.85	0.88
	Valid preview effect	-4.64	4.33	-1.07
	Plausibility preview effect	**-30.11**	**4.72**	**-6.38**
	Contextually related preview effect	-1.57	4.31	-0.36
	Predictability × Valid PE	**35.67**	**7.77**	**4.59**
	Predictability × Plausibility PE	**-26.03**	**6.81**	**-3.82**
	Predictability × Related PE	7.29	7.90	0.92
Gaze duration	Intercept	**266.14**	**5.28**	**50.41**
	Target predictability	**7.41**	**3.56**	**2.08**
	Valid preview effect	-5.29	5.22	-1.01
	Plausibility preview effect	**-35.62**	**5.03**	**-7.09**
	Contextually related preview effect	-0.62	5.29	-0.12
	Predictability × Valid PE	**45.40**	**9.06**	**5.01**
	Predictability × Plausibility PE	**-38.10**	**7.86**	**-4.85**
	Predictability × Related PE	-1.00	9.01	-0.11
Go-past duration	Intercept	**340.18**	**10.30**	**33.02**
	Target predictability	**27.91**	**8.61**	**3.24**
	Valid preview effect	3.56	12.91	0.28
	Plausibility preview effect	**-53.24**	**9.98**	**-5.34**
	Contextually related preview effect	-0.44	11.42	-0.04
	Predictability × Valid PE	**94.66**	**20.53**	**4.61**
	Predictability × Plausibility PE	**-66.32**	**17.79**	**-3.73**
	Predictability × Related PE	16.58	20.44	0.81

Total duration	Intercept	**345.23**	**11.20**	**30.84**
	Target predictability	**43.61**	**9.72**	**4.49**
	Valid preview effect	**-51.81**	**10.71**	**-4.84**
	Plausibility preview effect	4.02	8.99	0.45
	Contextually related preview effect	3.31	9.03	0.37
	Predictability × Valid PE	26.68	17.31	1.54
	Predictability × Plausibility PE	-12.11	14.88	-0.81
	Predictability × Related PE	1.39	17.01	0.08
Skipping	Intercept	**-1.06**	**0.11**	**-9.93**
	Predictable vs. Unpredictable	0.19	0.11	1.78
	Plausible vs. Implausible	**0.24**	**0.07**	**3.26**
	Implausible related vs. unrelated	-0.15	0.11	-1.39
Regressions out	Intercept	**-1.70**	**0.13**	**-13.41**
	Target predictability	**0.23**	**0.11**	**2.05**
	Valid preview effect	-0.01	0.18	-0.06
	Plausibility preview effect	**-0.36**	**0.16**	**-2.33**
	Contextually related preview effect	0.17	0.17	1.04
	Predictability × Valid PE	0.49	0.31	1.58
	Predictability × Plausibility PE	-0.28	0.26	-1.10
	Predictability × Related PE	0.03	0.28	0.10
Regressions in	Intercept	**-1.40**	**0.08**	**-17.63**
	Target predictability	**0.58**	**0.10**	**5.66**
	Valid preview effect	**-0.73**	**0.13**	**-5.74**
	Plausibility preview effect	**0.35**	**0.10**	**3.54**
	Contextually related preview effect	0.13	0.12	1.09
	Predictability × Valid PE	-0.07	0.22	-0.30
	Predictability × Plausibility PE	-0.10	0.18	-0.53
	Predictability × Related PE	-0.11	0.22	-0.50