

## Supplementary Materials

Table S1. *ALE results from literature related to reading in all bilinguals.*

	Volume	Region	L/R	BA	x	y	z	ALE
L1 processing	7144	Precentral Gyrus	L	6	-48	8	34	0.039
		Inferior Frontal Gyrus	L	46	-46	24	22	0.022
	6440	Supplementary Motor Area	L	6	-2	8	56	0.038
		Supplementary Motor Area	L	6	-4	18	48	0.028
	5368	Precuneus	L	19	-30	-60	46	0.035
	4592	Fusiform Gyrus	L	18	-20	-98	-12	0.021
		Inferior Occipital Gyrus	L	18	-30	-92	-4	0.018
	4568	Fusiform Gyrus	L	37	-46	-68	-12	0.031
		Fusiform Gyrus	L	37	-42	-56	-12	0.030
	4448	Inferior Occipital Gyrus	R	18	28	-94	-8	0.027
	Middle Occipital Gyrus	R	18	24	-92	-8	0.025	
L2 processing	8376	Middle Frontal Gyrus	L	46	-48	28	20	0.036
		Inferior Frontal Gyrus	L	9	-44	8	28	0.021
	7592	Precuneus	L	19	-30	-60	46	0.042
	6216	Fusiform Gyrus	L	37	-48	-68	-10	0.031
		Fusiform Gyrus	L	37	-42	-56	-14	0.030
	6056	Supplementary Motor Area	L	6	-4	14	50	0.047
	4232	Inferior Occipital Gyrus	R	18	26	-92	-2	0.022
		Middle Occipital Gyrus	R	18	34	-84	-8	0.021
	2000	Fusiform Gyrus	R	37	40	-56	-14	0.233
	1824	Precuneus	R	7	30	-64	44	0.033
1456	Insula	L	13	-44	10	-6	0.028	
	Insula	L	13	-38	16	6	0.016	
1144	Fusiform Gyrus	L	18	-20	-90	-10	0.018	

Note. Voxel level  $p < 0.001$ , cluster level FWE-corrected to  $p < 0.05$ . Volume: the cluster volume; L/R: left or right hemisphere; BA: Brodmann area; x, y, z: MNI coordinates; ALE: activation likelihood estimation values.

Table S2. *ALE results from literature related to reading in MP bilinguals.*

	<b>Volume</b>	<b>Region</b>	<b>L/R</b>	<b>BA</b>	<b>x</b>	<b>y</b>	<b>z</b>	<b>ALE</b>
L1 processing	6080	Inferior Frontal Gyrus	L	9	-48	10	34	0.029
		Middle Frontal Gyrus	L	46	-46	24	22	0.021
	3712	Supplementary Motor Area	L	6	-2	8	56	0.027
		Supplementary Motor Area	L	32	-2	16	48	0.020
	2952	Inferior Occipital Gyrus	R	18	28	-94	-6	0.020
		Lingual Gyrus	R	17	26	-94	2	0.019
	2736	Fusiform Gyrus	L	37	-42	-56	-12	0.025
	2208	Angular Gyrus	L	39	-30	-58	44	0.026
	1424	Lingual Gyrus	L	18	-24	-96	2	0.018
		Inferior Occipital Gyrus	L	18	-30	-92	-4	0.017
1040	Superior Temporal Gyrus	L	22	-50	-38	8	0.022	
L2 processing	5200	Inferior Parietal Lobule	L	40	-42	-42	44	0.027
		Precuneus	L	19	-30	-62	48	0.027
	4112	Precentral Gyrus	L	6	-38	8	28	0.026
	3880	Supplementary Motor Area	L	6	-2	14	50	0.041
	3680	Fusiform Gyrus	L	37	-42	-56	-12	0.023
		Fusiform Gyrus	L	37	-46	-68	-10	0.018
	2920	Middle Occipital Gyrus.	R	18	34	-84	-8	0.020
		Lingual Gyrus	R	18	18	-90	-4	0.016
	1160	Fusiform Gyrus	R	37	40	-58	-14	0.015
	952	Lingual Gyrus	L	18	-18	-88	-8	0.015
	Fusiform Gyrus	L	19	-24	-86	-12	0.015	

Note. Voxel level  $p < 0.001$ , cluster level FWE-corrected to  $p < 0.05$ . Volume: the cluster volume; L/R: left or right hemisphere; BA: Brodmann area; x, y, z: MNI coordinates; ALE: activation likelihood estimation values.

Table S3. *ALE results from literature related to reading in PP bilinguals.*

	<b>Volume</b>	<b>Region</b>	<b>L/R</b>	<b>BA</b>	<b>x</b>	<b>y</b>	<b>z</b>	<b>ALE</b>
L1 processing	2096	Fusiform Gyrus	L	37	-48	-68	-12	0.020
	1840	Precentral Gyrus	L	6	-44	4	26	0.017
		Precentral Gyrus	L	6	-48	8	36	0.012
	1416	Precuneus	L	7	-26	-66	46	0.016
	1200	Supplementary Motor Area	R	6	4	10	58	0.013
		Supplementary Motor Area	L	6	-4	2	56	0.013
	784	Precuneus	R	19	34	-64	48	0.017
	776	Lingual Gyrus	L	18	-18	-100	-12	0.013
		Fusiform Gyrus	L	18	-18	-92	-10	0.011
	L2 processing	3104	Inferior Frontal Gyrus	L	9	-50	10	28
		Inferior Frontal Gyrus	L	9	-44	8	24	0.017
1880		Angular Gyrus	L	39	-30	-60	44	0.016
1496		Fusiform Gyrus	L	37	-50	-68	-12	0.015
		Fusiform Gyrus	L	19	-40	-82	-12	0.014
1280		Insular	L	13	-44	10	-6	0.022
1016		Middle Frontal Gyrus	L	46	-46	28	16	0.017
928		Inferior Parietal Lobule	L	40	-44	-38	46	0.015
856		Medial Frontal Gyrus	L	6	-2	2	52	0.018

Note. Voxel level  $p < 0.001$ , cluster level FWE-corrected to  $p < 0.05$ . Volume: the cluster volume; L/R: left or right hemisphere; BA: Brodmann area; x, y, z: MNI coordinates; ALE: activation likelihood estimation values.

**Table S4. ALE results of L1 and L2 processing separately in Chinese-English bilinguals.**

	<b>Volume</b>	<b>Region</b>	<b>L/R</b>	<b>BA</b>	<b>x</b>	<b>y</b>	<b>z</b>	<b>ALE</b>
L1 processing	5456	Middle Frontal Gyrus	L	46	-46	24	22	0.021
		Precentral Gyrus	L	9	-46	10	36	0.020
		Inferior Frontal Gyrus	L	9	-38	12	30	0.018
	2944	Supplementary Motor Area	L	6	-2	8	54	0.020
		Supplementary Motor Area	L	32	-2	16	48	0.019
	2216	Angular Gyrus	L	39	-30	-58	44	0.024
	1768	Lingual Gyrus	R	17	24	-92	2	0.016
		Middle Occipital Gyrus	R	18	22	-92	-6	0.015
		Inferior Occipital Gyrus	R	18	28	-94	-6	0.014
	1096	Fusiform Gyrus	L	37	-42	-58	-12	0.018
936	Superior Temporal Gyrus	L	22	-50	-38	8	0.021	
L2 processing	3168	Precuneus	L	19	-30	-62	48	0.020
	2936	Inferior Frontal Gyrus	L	9	-42	8	28	0.019
	2920	Middle Occipital Gyrus	R	18	34	-84	-8	0.020
		Lingual Gyrus	R	18	18	-90	-6	0.015
	2768	Supplementary Motor Area	L	6	-2	14	50	0.031
	1488	Fusiform Gyrus	L	37	-40	-56	-14	0.015
	1464	Inferior Parietal Lobule	L	40	-42	-42	44	0.027
	1384	Lingual Gyrus	L	18	-18	-88	-8	0.015
	Fusiform Gyrus	L	19	-24	-86	-12	0.015	

Note. Voxel level  $p < 0.001$ , cluster level FWE-corrected to  $p < 0.05$ . Volume: the cluster volume; L/R: left or right hemisphere; BA: Brodmann area; x, y, z: MNI coordinates; ALE: activation likelihood estimation values.

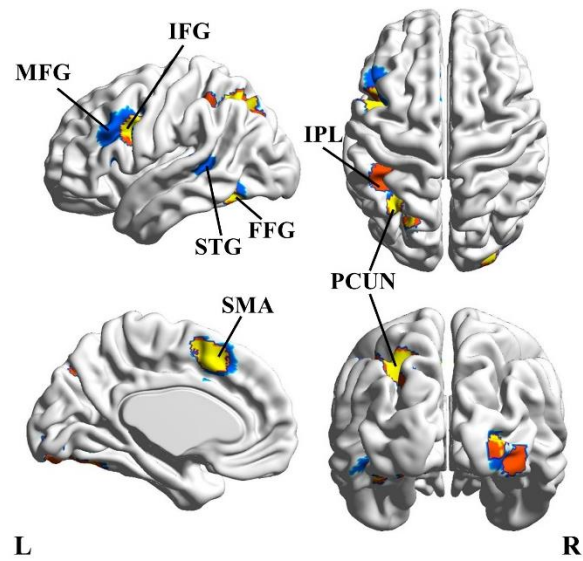


Figure S1. Brain regions showing consistent activation in L1 and L2 in Chinese-English bilinguals. The blue region represents the L1 meta-map, the orange region represents the L2 meta-map, the yellow region represents the region overlapping these two maps (Voxel level  $p < 0.001$ , cluster level FWE-corrected to  $p < 0.05$ ). MFG = middle frontal gyrus, STG = superior temporal gyrus, IFG = inferior frontal gyrus, IPL = inferior parietal lobule, SMA = supplementary motor area, FFG = fusiform gyrus, PCUN = precuneus.